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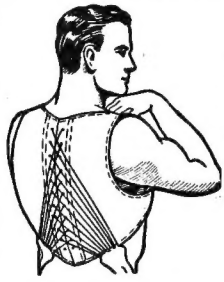

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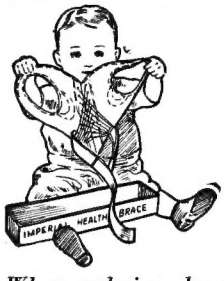

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Science Fiction QUARTERLY

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THE MOON CONQUERORS ..... **R. H. Romans** **4**

Where did the human race originate? How did some of its races come into being? Follow our intrepid voyagers, including a young woman, in their hazardous trip through space to the moon to find the answers to some of our age-old secrets!

SPACE-SHIP DERBY ..... **Milton Kaletsky** **101**

The sun is a pretty hot place, as any rocket-racer can tell you—but those who get too close to it, as did Jim Holt, seldom return to relate their experience!

PACKAGE OF POWER ..... **David C. Cooke** **111**

They told Kent Cortile that he was "too old" to fly the space-ways—but he aimed to prove otherwise, with his outlawed flight into "Hell Stretch," most deadly spot in space, and his struggle to secure the mighty Power from those who would misuse it!

POLAR DOOM ..... **John Coleridge** **121**

Dr. John Manning was a power mad egotist whose warped scientific mind sought the subjugation of the earth's beings, with only one man, half a world away, to stop him!

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Harry Skouras got himself a human guinea pig for only twenty dollars—but his wonderful experiment back-fires when the subject disappears!

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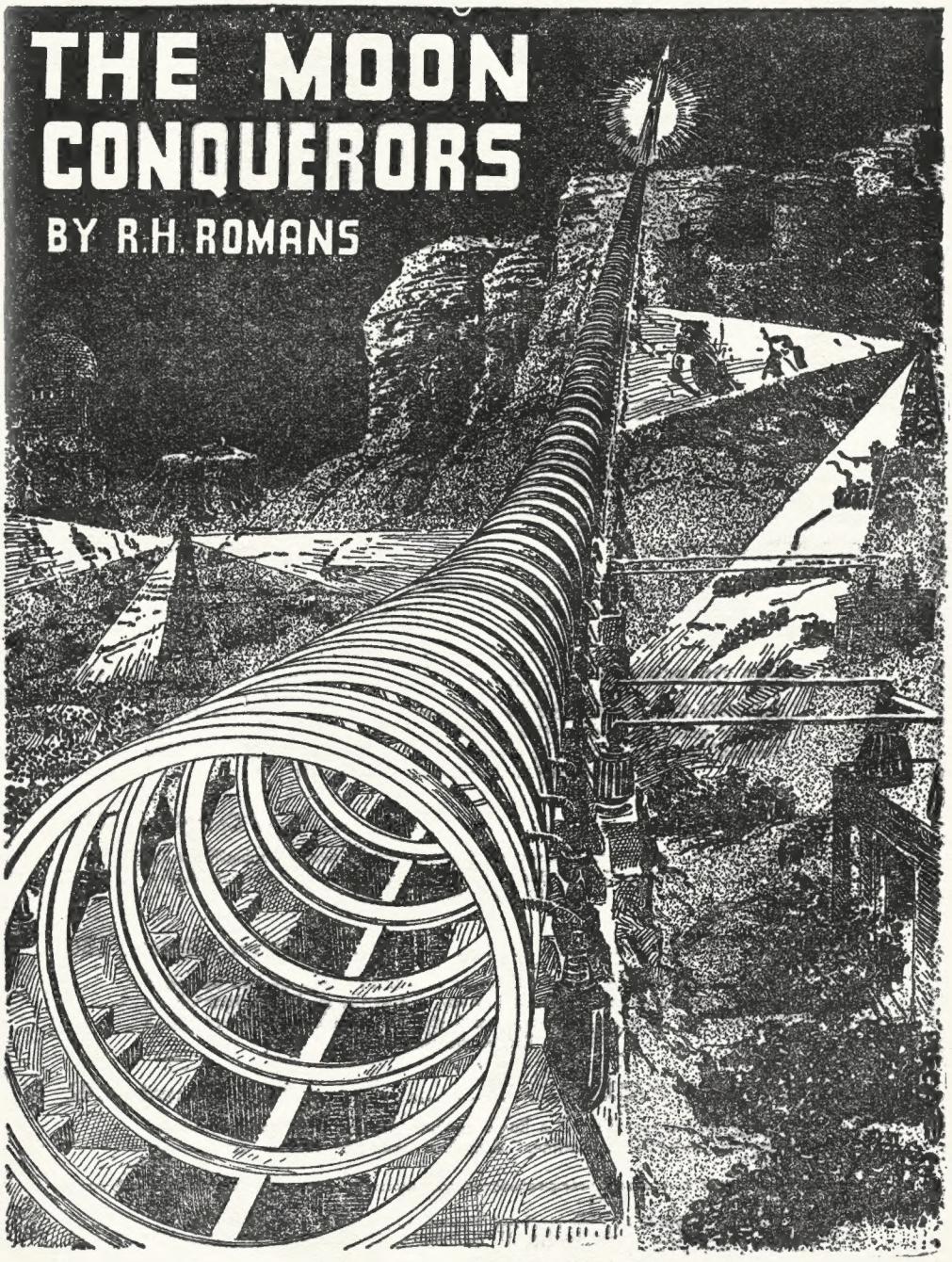
The "Astronaut" increased its speed through the gun up the curve and out of the cement muzzle. For an instant the powerful searchlight on the tail of the rocket was seen rising higher in the sky and disappearing in the west.



BY POPULAR REQUEST WE ARE REPRINTING, "THE MOON CONQUERORS" ONE OF THE FINEST OF THE SCIENTIFICTION NOVELS EVER TO HAVE BEEN PRESENTED, COMPLETE IN THIS ISSUE.

CHAPTER I

EVER since I was just a little girl, the moon has been the most interesting and fascinating object in my life. Among my earliest memories as a four-year-old is that of the time I asked Aunt Mary (who was the only mother I ever knew) to get it for me, and she answered it was so high she could not reach it. I could not understand this; for she had never before failed to get me anything I wanted. When I cried for the moon, she thought it was very funny and laughed at me.

Then, in my childish mind, an ambition was born. Today, at the age of twenty-two I am more determined on it than ever. In a measure, that ambition has been fulfilled. I have learned more about the moon than anyone on earth and I can not think of it, except as my own. So far as my fellow men are concerned, the moon belongs to me; but I am still as helpless as Aunt Mary when it comes to reaching out and taking possession of it.

Even as my childish mind grew more matured, after my great disappointment, the big silvery moon remained the same—the most beautiful, fascinating and mysterious object of my life. I could not learn much about it; some told me it was made of green cheese. Others said it was larger than the earth and people lived on it. Some told me it was red-hot, while others claimed it was covered with snow. Aunt Mary told me it was just placed in the sky so we could see at night; but she could not explain why it did not shine every night. Some of my books pictured on it the smiling face of a man. He was "the man in the moon"—and that was all I could find out about him.

Dissatisfied with these obviously dissimilar answers I carried my scientific research outside of the home, and asked Deacon Jones, whom I considered the wisest man in the world, about the man in the moon. And he told me a story that he had heard from his grandmother when he was quite young.*

According to this story, there was once a wicked man who refused to go to church on the Sabbath day and always stayed at home and burned brush-heaps. He would not listen to his more devout neighbors and live

A better life. The sound of his ax and the smoke from his fires ascended into Heaven, and the Lord was very angry with him.

"Man," asked the Lord: "Why do you work on the Sabbath?"

"Oh Lord," this wicked man answered: "I have so much work to do and the days are so short. For six days I cut trees and on the Sabbath, I burn my brush. That is the only way I can get ahead of my neighbors."

"Do you not remember the fourth commandment?" answered the Lord. "Because you have broken it in your greedy effort to get ahead of your neighbors, I will banish you to the moon, where each day is two weeks long. There you may cut trees and burn brush until Judgment Day; and your story shall be an example to all men who persist in breaking the Sabbath."

"Now, Dorothy," said the deacon, smiling, "that is the story of the man in the moon as it was told to me fifty years ago. Then it was accepted as the truth; but today no one mentions it."

"But, Mr. Jones," I asked: "Is the moon really a world? Are the days two weeks long there?"

"Yes, and the nights are two weeks long, too. But no one lives there, because there is neither air nor water on the moon."

He then explained that the moon always has the same face turned toward the earth. He told me, too, the reason why the moon apparently changes her shape from "new" to

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*This version of a nursery story common to many lands was well known a century ago in households of Puritan traditions.—*Author.*

"full"; and why she is always later in rising each night. Some time later he called me to view the first lunar eclipse I had ever seen; and then he let me see the pictures of the moon in his books. He pointed out the so-called "seas" and "lakes," as well as the familiar craters of Copernicus, Tycho and Newton. Before I had ever had a lesson in the geography of our own world, I knew more astronomy than many high-school graduates and more *Selenography,* or lunar geography, than many of the graduates of the larger universities.

WHEN my father came home at Christmas that year (I was then nine), he was amazed and pleased with my knowledge of the moon; but he said:

"Dorothy, I am glad you know the moon so well; yet there are other things you must learn before you give it such a special study. When you have really learned these other things, I promise to show you the moon as no one else has ever seen it before."

My father was always a mystery to me. I saw him but once a year, when he came home to spend two weeks at Christmas with Aunt Mary and me. The remainder of his time was spent in Arizona, where he claimed to be working a mine. He had always an abundance of money; so Aunt Mary and I never wanted for anything that money could buy. Father said that his money came from his mine; but Aunt Mary (who was really not my aunt, but a widow whom Father had employed to care for me after the death of my mother) told me more about him than he intended me to know.

According to her story, his mine was merely a mask to hide his scientific experiments, and his money was an inheritance. My father, an only child, had inherited a scientific mind from his father, and from his mother over two hundred million dollars, the residuary estate of Caleb Brown, which was once considered one of the largest private fortunes in America.

My own mother died when I was born. Father returned with me to New England, where he left me in the care of Aunt Mary. He then turned all his property into secure investments, which would not require his continual attention, and returned to his "mine" in the mountains.

My eighteenth birthday found me in my last year of high school. My school work had been a pleasure, for I was learning much about the moon. My father had sent me a telescope, ten feet long, which was mounted on a tripod so that I could turn it to any part in the skies I desired to view. Through this, I received my first glimpses of the rings of Saturn, the red spot of Jupiter, the canals of Mars and the dead craters, high mountains and dry sea bottoms of my own beloved Luna.

While other young people were using the moon only as an inspiration for love-making, I was studying it with my telescope. Every time I looked at it, I saw something new and interesting that had hitherto escaped my attention. While my friends were reading love stories, I was perusing such things as Jules Verne's "Trip to the Moon" and serious scientific works on the earth's satellite. As I looked at the moon through my telescope I loved to imagine myself in the rocket with Michael Arden, Capt. Nichol and President Barbicane. These fictitious characters were to me real men.

"The First Men in the Moon," by H. G. Wells, had an equally great effect on me. With Cavor and Bedford, I often explored the vast caverns, the home of the strange Selenites. Their gravity-resisting material was reality to me. I wondered how it could be made, and often imagined myself the inventor or discoverer of such an element and later using it for interplanetary travel. I enjoyed thinking of myself as a sort of female Christopher Columbus, whose destiny it should be to open the moon to all

mankind. It would be my San Salvador, a small island in the vast sea of space; a stepping stone to the greater worlds that lay beyond. I would establish colonies on the moon, Mars, Venus or any of the worlds that proved habitable. And although these fancies carried me through the length and breadth of space, the moon, which I knew to be a dead world without a breath of air on it, always held the center of my interest.

Father's secret work continually excited my curiosity. It was my dream that he should discover the means to control gravity. But, as years passed and he was growing old without discovering the secret, I naturally hoped to fall heir to the solution of the problem.

When he was home for his annual visit during my last year in high school, I asked him pointedly if he were working on the problem of gravity control.

"No," he said at once. "The control of gravity has always seemed impossible to me. I am devoting my life to the mastery of a problem that I thought could be solved, and I am making a giant telescope with which I hope to be able to see an object on the moon as small as a man.

"No one knows of this except a few trusted assistants, who are sworn to secrecy. When I first started work on this telescope, over thirty years ago, all astronomers and lens makers laughed at me and declared it impossible to build. It would have to be too long. But now the most difficult part of the task is completed; the making of the giant lens, 1200 inches in diameter."

"100 feet!" I exclaimed. "That does not sound possible! Such a telescope must be over a mile long! What machinery will you use in handling it? How could you cast and cool a lens of such proportions?" I became aware immediately of my own scientific knowledge carefully accumulated for years. I would show my father that I was worthy of his confidence.

"I'll explain it all when I show it to you," father said smilingly, "but that will not be until it is finished. Such a lens is not made in a few months; I employed twenty of the best lens makers of the old world for a period of over twelve years to construct the big lens, while the eyepieces were being made by a firm in Paris. I now have a staff of mechanical and electrical engineers working on the machinery for handling it; but it will be years before the observatory is completely equipped."

"But Daddy, why did you not tell me before? Let me go back with you and help."

"No, you would not be able to help much at present. I have other plans for you. You are to enter college this fall and if you can master such subjects as optics, mathematics, astronomy and their kindred sciences, you could carry on my work when I die."

"Oh, Daddy, I'm sure I will. I take to science and mathematics as readily as a duck takes to water; and if I ever marry, it will be to some scientific man who will consider me a coworker and equal, not a domestic pet."

CHAPTER II

THE next four years of my life were spent in college, where I did my best to break down the old tradition of masculine superiority in scientific subjects. I mastered the subjects my father had prescribed for me and made an enviable record for myself as a student. The moon still remained the object of my devotions; the big telescope in the university observatory opened up many of her mysteries to me. But, in spite of my knowledge that the moon was a dead world, floating in a perfect vacuum, when I saw her I felt a renewal of my ambition to reach her and carve my name on one of her highest cliffs. For a reason that I could not understand, my father never visited me while I was at college. His letters be-

came fewer, and each read almost like the one preceding it. But always he impressed upon me the importance of completing my education before joining him in Arizona. He was confident, however, that his telescope would be a success.

Despite my pleadings he never visited me. Sometimes, it was his health that would not permit such a long journey; again, some important thing would come up unexpectedly and cause him to postpone his visit. And during my last year, when his letters almost ceased entirely, I became alarmed. I could scarcely wait until commencement was over to go to him.

The last few months seemed like an eternity, but as soon as commencement was over I packed my belongings and bought a ticket for Brewster, Arizona.

The town of Brewster had grown up around a small siding, built for my father, when his supplies were first shipped to that point, years ago. Now, however, it is a beautiful mountain resort, whose chief attractions are the extremely dry climate, incomparable scenery and a modern hotel, which is an oasis to the hundreds of automobile tourists who daily pass the point on the new state highway.

Father did not meet me at the train as I expected; so I went to the hotel to rest, before trying to find him. The proprietor, who was one of the oldest inhabitants of the town, told me about him.

"Yes, I used to know William Brewster," he said to my question: "Years ago he built a fine home about ten miles up in the mountains. You can see it from the window—wait, I'll show it to you."

With his binoculars, I could see the house. It was a large brick building with a red tile roof, looking like the summer place of a millionaire.

"I'd enjoy going up there," I remarked: "Where can I find someone to take me?"

"There are several young men who would be glad to do it; but my advice is to stay away from that place."

"Why?"

"Mr. Brewster is an eccentric old hermit, who long ago advised me to keep my tourists off his property. He owns several square miles of barren mountain land and threatens to shoot all trespassers. He has never shot anybody that I know of, but everyone lets him alone."

It was evident that my informer did not know my identity, so I decided to draw him out and see how much he could tell me.

"What sort of a man is this Mr. Brewster? Does he live up there alone? My curiosity is aroused. I'd like to meet him."

The innkeeper shook his head.

"When I first came here, there was a bunch of foreigners up there; twenty-five or thirty families. But, one by one, they all left for the old country. Brewster owned the place, so he rented it to a club of some kind in Chicago. For several years about one hundred fine American people made this place their headquarters. They always seemed to be busy and there were a lot of motors and machinery taken up there to be installed for some purpose.

"But, about three or four years ago, they all left for Chicago, leaving the old man alone. No one knows what he does now, but he has the name of being as crazy as a bedbug. He comes down here once a month to buy supplies and is always telling people how dumb they are.

"One day he talked about seeing people on the moon and Mars with a big telescope he made. When they heard of it over in Flagstaff, two young men from the Lowell Observatory came down to investigate. As usual, he refused to admit them, but they saw enough to realize that he had nothing that even looked like a telescope. From then on the boys here in town have poked fun at him. But he tells them they are as dumb as horned toads and keeps talking about

a daughter who is coming from the East to show them that he is not as crazy as they think. But this daughter has never shown up and the boys think he is crazier than ever."

"Would it surprise you to learn that I am his daughter?"

My question was answered by the amazement that marked his face. He offered an apology for the unkind remarks he had made. But I felt that he had told me the truth, and accepted his offer to take me up to the Brewster house the next morning.

THE distance up the mountain was only ten miles in a straight line, but the crooked road up the steep mountainside was fully thirty miles long, and so steep that it was necessary to drive in low gear most of the way. Even then we had to stop often to refill the radiator and let the engine cool. My driver, knowing that my feelings were hurt by what he had said of my father's reputation, attempted to take my mind from my troubles by discussing other things. But, since he refused to tell me any more, there was nothing to be discussed. However, he did promise to do anything that would be of assistance to me.

At last we arrived at our destination and the driver blew his horn. We soon saw an old man, whom I recognized as my father, coming down the path, a gun in each hand.

"What do you mean by making all that noise? What do you want here?"

"I'm sorry, Mr. Brewster, but here is a young lady who is anxious to meet you."

"We're not admitting young ladies or anyone else today. You just want to bring a woman up here to laugh at me. Turn around and leave or I will fill you full of lead!"

"Wait!" I cried. "Father, don't you recognize me? I am your Dorothy."

For a moment he looked at me. Slowly he lowered his guns, and tears came to his eyes as he spoke:

"Dorothy, I thought I told you to finish school before coming out here."

"But father, I graduated a week ago; are you not glad to see me?"

He looked helplessly from the driver to me.

"Yes. Come in."

I slipped a roll of bills into the driver's hand and told him to return with a doctor as soon as possible. I then passed through the gate, which was locked behind me.

In the house everything was dirt and confusion. Paper, tin cans, empty boxes and excelsior littered the floor. Father did not seem to be himself at all; he had developed a contempt for humanity that was nothing short of a bitter hatred. He talked about those illiterate tourists and natives down at Brewster, whose intelligence in his estimation was less than that of the ants which they crushed under their clumsy feet. He raved about those would-be astronomers and scientists back East, declaring they were just as primitive as their apelike ancestors. They imagined the universe had its beginning and its ending in their teachings, and everything else was absurd and impossible. He declared that any real man with determination, grit and capital could disprove any of their doctrines, just as easily as he had done so with his new telescope.

I hope the reader will pardon me for not detailing all his ravings. He was my father and I loved him; so I will spare myself the painful task of recording the things I find so hard to forget.

Dr. Zellas called the next day and gave him a very thorough examination. Later he had called me aside and asked a number of questions about his past, and finally gave his diagnosis:

"Your father has worked his mind to death. He has spent a lifetime working on a problem too great for one man; he has never taken any time for rest or recreation and his mind is exhausted. The fact that he has been alone for a number of years is enough

to drive many a younger man insane. I have seen sheep herders, with no companion but a dog and thousands of sheep, lose their sanity, temporarily at least, in a much shorter period. Your father's case is similar; but, his mind being stronger, his insanity has been postponed. But he is human and the inevitable can not be postponed much longer.

"His only cure is companionship. He has been looking forward to your coming for years, and your presence here is better than any medicine I can prescribe. Stay with him all the time; talk to him and agree with him in everything as long as he does not want to do anything unreasonable. I am leaving some medicine for him; but I shall call every day and see how this treatment is agreeing with him."

I could see the wisdom of this psychological treatment and the doctor's instructions were carried out to the letter. Father's condition began to improve immediately. During the long hours we spent together, he told me, little by little, of the privation, suffering and loneliness he had endured. He had at first pretended insanity to the people of Brewster for the purpose of checking their curiosity. He was afraid someone would learn his secret, so he prepared to play the crazy old hermit if any scientific men came to investigate. He had purposely boasted of seeing men on the moon and Mars and made his assertions so absurd that they would be considered the ravings of a madman if his secret were suspected.

The telescope had been finished before I entered college, but he did not dare to let me know it for fear I would not finish my education. During the years after its completion, he had looked forward to the day when I could join him and, together, we could explore the infinite and fathom its hidden secrets. He had made a study of the heavens by himself and learned things of which no astronomer had seen or even science fiction writers had ever dared to dream. His superior knowledge caused him to look with contempt upon the findings of other observers and he began to consider himself almost an equal of his Creator.

But he had forgotten that he was only a mortal, with human limitations. The knowledge and conceit which he had acquired were more than his overtaxed mind could carry. Realizing this he now looked forward to the day when Dr. Zellars would pronounce him cured and permit him to show me his observatory. It is unnecessary to say that this was my greatest desire also.

CHAPTER III

IT was not until several months later that my father was permitted to go ahead with his work. Naturally the first thing he did was to show me the result of his lifetime of labor in the mountains.

It was a cool evening in the early fall when I received my first glimpse of the 1200-inch lens, the "Eye of the World," as my father had named it. It was located inside a circular brick building on the flat summit of another peak, about a mile away. He decided not to go over to it that evening; but at sundown he would show its operation to me from the observatory on our own summit. He gave me a pair of binoculars and asked me to watch the cylindrical building while he entered the observation car.

As he explained it, the huge lens and mirror were moved by motors located in the lens-house, for which the control switches were in the observation car, which will be described later. He began manipulating the switches and the entire side of the lens-house facing us parted in the middle and swung open like two doors. Similarly, the roof opened and moved down over the sides of the building, out of the way. The giant lens now rose above the walls, looking like a vast flat dome that could have served as a roof for the entire

structure. The dying rays of the setting sun were mirrored in its convex surface, making it an object of rare beauty. He then swung the glass over on its edge, showing me its massive circumference. It turned back slowly until its edge was facing us, and I could not but marvel at its thinness. The steel rim around the edge was all that was visible in the gathering dusk.

Father then called my attention to a large plane mirror, located below the lens, and explained that the rays of light from the star under observation passed through the lens and struck the mirror, which was automatically tilted to the proper angle to throw the rays across the valley and strike a certain point where the eyepiece was located in the observation car. The mirror was moved by separate motors, which worked from the same switch, and were synchronized with the machinery for moving the lens. This made it possible to keep the mirror automatically tilted at the proper angle.

A small telescope, a range finder, was used to locate the star to be studied and mark its position in degrees of altitude above the horizon and its direction from the zenith. The giant lens could be turned to this position and the clockwork mechanism started; which moved the lens slowly, as the earth turned on her axis, following the path of the star across the sky and keeping it under observation.

To demonstrate how it worked, father directed the lens toward Vega, who was almost at the zenith. He said we would not need an eyepiece to observe the effect with this giant star. As the lens moved into position, the mirror became brighter and in a few seconds the concentrated rays from Vega were focused into a narrow beam of light, almost as bright as sunlight. It was the most amazing thing I had ever seen! It was almost impossible to believe that this narrow pencil of bluish white sunlight was coming from a giant sun, a hundred and sixty million million miles, or twenty-seven light-years away!

As the telescope had not been used for some time, father thought the lens must be too dirty for satisfactory observation that night. Consequently, he manipulated a few switches, which caused the lens to drop into position. Then he replaced the roof and closed the doors.

As father explained, he had first conceived the idea for this telescope while a student at Harvard. Everyone to whom he mentioned the idea had discouraged him, except his father, who realized that the science of light and optics was a deep one, the surface of which had only been scratched.

In an attempt to learn the secret for making the superior French lenses, he stumbled upon a formula that produced a glass superior to the French product. This "Brewster glass" proved to be a speedier lens than the later-to-be-discovered quartz glass. It also had the strange quality of being entirely free from *practically all chromatic aberation;* hence it was not necessary to use a compound lens of both crown and flint glass, each to correct the faults of the other. The Brewster glass was very easy to work. A lens could be broken in two pieces and fused together again, without the place showing where they were joined. A lens could be made in two or more sections and fused together; making it impossible to distinguish it from a lens made in one single piece. This made the construction of the "Eye of the World" possible.

He found that his glass was immune to moderate changes in temperature; a variation of sixty degrees was necessary before any distortion was noticeable. To guard against atmospheric interferences, so disastrous to large telescopes, he decided to build it in the mountains of Arizona, where the dry climate and atmospheric conditions were most fa-

vorable. A large lens and a long focal length made it possible to obtain a maximum of light, while the iris shutter permitted him to use only the desired amount of light to obtain the best results.

A YEAR or more was spent in making plans for the observatory. The size and thickness of the lens, as well as that of the various eyepieces, were calculated to an exactness; when he was ready to begin work on it, he knew exactly what he was going to do. Another year was spent in finding a location that met his requirements: two mountain peaks, the proper distance apart, with one, upon which the lens-house was to be built, exactly north of the observatory summit. When the location was found, he gave the contract to a construction company to build the lens-house which was to be used at first as a factory in which the "Eye of the World" was to be constructed. He also had erected another large building, in which he expected to house his army of workers while the observatory was being built. Many problems were encountered, among which was the difficulty in moving supplies up the mountain side. A roadway had to be constructed and thus two more years passed before the construction of the buildings could be started.

Then he went to Paris and returned with twenty of the foremost lens makers in France and their families. Nothing but the highest of wages could induce them to come to the wilds of Arizona and stay away from civilization until the telescope was finished. It was during this period that I was born and my mother died.

The lens was not cast in one piece, but in over eleven hundred sections, each of which was thirty-six inches in diameter. These sections were hexagonal in shape and fitted together like cells in a honeycomb. Each was cast in a separate mold, ground and polished to an exact measurement and fitted and fused in place, giving the finished product the appearance of being cast in a single piece.

It sounded simple when father explained it, but it had been a long and tedious task. Many times he felt like giving up in despair; but only that iron will and bulldog determination, "The Brewster Grit," kept him going during the long years. But at last, after twelve years, the "Eye of the World," on which twenty million dollars had been spent, was finished. It was the largest and most expensive piece of glass in the world—and, as yet, no one could tell whether it could ever be used in a telescope or not.

The large mirror presented the next difficult task. It was essential that the glass used in the mirror should not show even a microscopic variation in thickness. Ten carloads of special plate glass were brought up the mountain, before there was found thirty thousand square feet of perfect glass from which the gigantic mirror, two hundred feet long and one hundred and fifty feet wide, was made. The mirror was made in 300 sections, each ten feet square, which were fused together and silvered, making the largest mirror in the world. This big piece of glass could not support its own weight; so a flat metal support was placed under its entire area.

While the lens and mirror were being built on the site where they were later to be used, lens makers in Paris were making the set of thirty separate eyepieces, according to specifications and measurements furnished by my father. Each eyepiece produced a different degree of magnification; the most powerful would show on the moon an object as small as a human being, but the field of vision was quite small. Another set of lenses, the other extreme, would show a larger surface of the moon, but the magnification was proportionately lower.

The next difficult task was the construction of the machinery for moving the lens and mirror and holding them in position. This was designed and

installed by a staff of mechanical and electrical engineers from Chicago. It was impossible to manufacture the equipment in the mountains; so it was shipped to Brewster and a fleet of motor trucks was worn out in moving it up the mountain. Six more years passed before the machinery was all in place and a high-tension line was erected to supply the motors with electrical energy from Phoenix, ninety miles away.

When we returned from the lens-house, father showed me the observation car and the eyepieces. The car was a building on wheels, which were geared to a straight track full of fine cogs, extending toward the lens-house. The cogs in the wheels of the car meshed perfectly with the cogs in the track, making it possible to gauge the distance from the large lens accurately by the revolutions of the wheels. Upon entering the car, the first thing I noticed was a large wheel, standing upright across the center of the car, upon whose circumference were thirty complicated sets of lenses, comprising the various eyepieces. Father asked me to sit down in the observer's seat and pull the nearest lens into position. As I did so, the car moved slowly forward. I turned the wheel and another eyepiece came down and locked in position, while the car moved slowly forward and stopped at the proper position for that particular lens. Each eyepiece worked at a different distance from the objective lens and the movement of the car on the track was equivalent to the shortening and lengthening of the tube of smaller telescopes. The electrical engineers had arranged a device by which the car would move to the proper position and stop of its own accord, when the lens was in position.

After examining the eyepieces, father next showed me the switch-board for controlling the motors that moved the lens and mirror. Each switch was plainly marked, and their use was quickly learned. He next directed my attention to the spectroscope, astronomical camera and other observatory equipment, with which I was already familiar.

A light-shield on the exterior of the car was the only thing I had not examined; its purpose was to keep outside interfering light from striking the eyepiece. It consisted of a black metal tube, about twenty feet long, pointing toward the lens-house, just in front of the eyepiece. It was all that was required to take the place of the tube of a smaller telescope; as its only purpose was to shield the eyepiece from outside light.

THE warning of Dr. Zellars was entirely forgotten that night. The telescope was ready and the sky was full of stars waiting to reveal their secrets. Father's excited enthusiasm was enough to make one think he had just bathed in the Fountain of Youth. He ran about the car explaining first this device and then that, so rapidly that I utterly failed to understand half of it. He kept warning me about looking at bright stars—"If you are not careful, you will be blinded by their intense rays. When their maximum light is received there are twenty stars that in the telescope appear almost as bright as the sun does to the naked eye. There are about a hundred more that will hurt your eyes. Always open the iris shutter slowly when looking at a new star. Sit down here in the observer's seat and I will tell you every move to make."

Trembling with emotion, I obeyed. Here was the moment we had both been awaiting for years. The greatest desire of our lives would presently be realized when the eyepiece before me would become a window, through which I could look and learn the secrets of the skies. The moment was so dramatic, so full of expectancy, that I hesitated to touch the first switch. To father, it was a common occurrence; but to me it was a sacred rite. The heavens were about to declare

the glory of God and the firmament to show His handiwork.

Under father's direction, I swung the lens toward the Great Nebula in Andromeda. Beginning with the weaker lenses, I increased the magnification until the nebula was resolved into stars of varying degrees of brightness. It was so far beyond the limits of the Milky Way that it was distinguishable as a separate island universe like our own, full of brilliant stars—but just another molecule in the vast cosmos of outer space. I next pointed the glass toward the Milky Way and a thick group of great sun-like stars dazzled my view.

I calculated the speed of the moon across the sky, estimated the amount it was necessary to lower the pendulum and submitted my figures to my father.

"You have the right idea," father replied, "but you have forgotten something. You know that the moon increases her speed in her orbit as she approaches the sun and decreases it as she passes from new moon to full? You will find it necessary to lower the weight or raise it as the occasion requires. You will find complete directions pasted on the door near the clockwork, in the lens-house. You will also find it necessary to clean the lens and mirror every day, while studying the moon with a powerful eyepiece. You will find the surprise of your life when you first receive a close-up view of the moon."

"What is it? Is the moon inhabited? Is there really enough atmosphere to support life?"

"For all I know, the little worlds in vast space between the planets are inhabited too. I have found life on the moon and all the planets that I have examined. But it is not exactly the same forms of life with which we are familiar. Evolution, working with different materials, under different conditions, has produced different results. Terrestrial life is not duplicated elsewhere."

"Can life be found on all parts of the moon? Or is it confined to particular regions?" I asked.

"Most of the surface of the moon is desert land, but look at Mare Crisium if you want to see the Selenites."

CHAPTER IV

TWO nights passed before I was able to attempt a look at the moon.

My first vision of the surface of the moon with the most powerful eyepiece showed an almost level plain, free from both vegetation and sand. No evidence of even the slightest atmosphere was found, and I was inclined to think father was joking when he said life was possible on the surface of the moon. I moved the lens toward the circular ring of mountains and the smooth level appearance of the surface was broken by small craters, many of which did not seem to be more than a foot or two in diameter. Their height in most cases was greater than their diameter. The surface became more uneven as the lower slopes of the mountains came into view. I could now distinguish a form of brown, grassy vegetation. A few minutes later I discovered a small spring of water at the head of a short stream, which ended by soaking into the sand and silt. In spite of the heat from the sun, which has been estimated at two-thirds greater than that received on the surface of the earth, there was no evidence of evaporation. I can give no cause for this; it is just one of the many unsolved mysteries of our satellite.

An examination of this sparse brown grass led to the discovery of a strange animal that almost defies description. Strange animals or objects can be described only by a comparison with familiar things. Therefore, my description of this strange Selenite must be vague and probably misleading. By taking considerable license, this fellow could be said to look like an ape; but an ape looks

more like a man than this Selenite like an ape.

At least that was my conclusion. Father who always credited me with too much imagination laughed when I told him of it and said that even with our telescope it was impossible to distinguish objects so definitely. This led later to a conflict over another observation. But let it be said here that father disputed my claim to have seen the features of Selenites.

But as I first saw one, he was eating this coarse brown grass, using his forefeet or apelike hands to feed himself. He walked erect like a man, but his arms were long enough to reach the ground. His body was hairless, but the skin was thick and full of wrinkles, like that of an elephant. The head was quite small and presented an apelike appearance. The ears were almost invisible, while two grotesque holes in the face served as nostrils. The jaw was large and massive, but I was unable to see the teeth, to determine whether or not he was entirely herbivorous. His chest was much smaller than one would expect to find on a creature living in a rarefied atmosphere. The abdomen was unusually large which caused me to think their eating habits were about the same as that of our cattle, who fill their stomachs at opportune times and chew the food at their leisure.

Soon another of these flat footed Selenites came slowly gliding down the slope of the mountain, using his feet for wings. He had all the grace and agility of an athlete on skis, or some creature from the Arabian Nights, riding a magic carpet. When they attempted to fly upwards, their efforts were most ludicrous. The motion of their feet was comparable to that of a duck, but they moved more rapidly than the wings of a sparrow. This explained both the cause and purpose of those massive leg muscles.

I followed the flight of the pair as they joined the remainder of the herd. Here I saw more uses for these clumsy but useful feet. Some were lying flat on their backs, chewing their cud like cattle, with their huge feet above them like an umbrella to protect their bodies and eyes from the rays of the sun. While on the ground their favorite means of locomotion was walking on their hands with their umbrella-like feet above them. But the strangest thing of all was to see one wrap his feet about his body like a big blanket and go to sleep. This protection was no doubt needed during the long lunar nights, when, if the estimates of our scientists are correct, the temperature goes close to absolute zero. The finding of life at all on the moon and the fact that these creatures used their feet for gliders convinced me that the moon had an atmosphere, which was entirely invisible. This atmosphere, no doubt, prevented the extreme low temperature from ever being reached, but at this time, I only knew that further study was necessary before any definite conclusions could be reached.

The perfectly natural and serious actions of these creatures made them more ridiculous and humorous than any group of circus clowns could pretend to be. I wish I could have taken more pictures on motion picture film; letting them be shown to an unsuspecting audience in a theatre or the hide-bound astronomers who deny the possibility of life on the moon.

THE next night I directed my telescope to the "terminator," that part of the moon which divided the lunar day from the night—to the regions where the sun was just rising. I did not use the most powerful eyepiece this time, because I wanted to see a sunrise on the moon. Beginning at the lunar North Pole, I followed the path of the rising sun down to the Alps and watched those bright peaks and craters rise out of the darkness into the sunlight.

The entire crater of Tycho seemed to be composed of bright, shining substance, the surface of which is not smooth but full of tiny globes, peaks

and depressions. Each of these reflected, in its spherical surface, a tiny image of the sun. With the lens stopped down to a minimum, I could see nothing but millions of these tiny solar images. Within the interior of the crater, I thought I could see something moving. Those points of light were changing their position, appearing and disappearing at random. Now and then a bright light would appear suddenly, eclipsing all others near it by its brilliancy. I am positive that I saw dark objects moving within the shadows.

Was it possible that Tycho is still molten like some of our volcanoes? Had I seen bubble-like formations and movements in the lava? No, that could not be; because I had seen neither steam nor smoke and the crater was invisible, except in the sunlight. Were these moving objects some form of animal life, some intelligent beings who were mining this mysterious substance? Was this bright material glass, made by Nature? Was it that brilliant substance found in ancient craters of Africa, known as diamonds? Was it rock-crystal? Was it silver or gold or some more valuable metal yet unknown on our planet? I do not know; if I were to give all my ideas, one would require the patience of Job to read them.

For two more nights I studied the crater of Tycho. Instead of solving its mystery, I only added to it. There is only one thing I can give as a fact: the intensity of the light increased each night as the rays of the sun struck the crater more directly. I will not attempt to tell all I failed to learn, but will pass on to a greater mystery, which I discovered a few nights later.

CHAPTER V

THE moon was almost full and I was busy exploring the south-eastern slopes of the Apennines. I was examining strange forms of animal and plant life and trying to identify a certain animal as the five-toed-eohippus, the pre-historic ancestor of the horse. Suddenly a large shadow passed directly across my field of vision. I attempted to follow it, but it passed so quickly I lost it. Quickly changing to a weaker eyepiece with a larger field I began searching for it. I can not describe the anxiety with which I watched for a glimpse of this dark shadow or the mysterious object that cast it. At last, I found them both and followed them as they passed along the lower slopes of the Apennines and out into Mare Serenitatis, the "Sea of Serenity," the smoothest, but loneliest of the seas we know on the moon.

When I changed to a more powerful lens, I found the moving object to be a sphere, about two hundred feet in diameter. It was made of some wine-colored metal, covered with windows and doors and peculiar metal rods and projections. I estimated its speed at about fifty miles per hour, as it moved across the sea-bottom. No propellers were visible, nor could I believe it filled with gas like our balloons or dirigibles. Here perhaps was the answer to my fondest dream—gravity control for inter-planetary travel.

For a few minutes my joy knew no bounds. Perhaps I could learn its secret and construct a similar sphere. From what planet had it come? What manner of creatures were inside? Were they exploring the moon, preparatory to making an attack on the earth? Or, worse yet, had they come from the earth?

Had someone actually solved the problem and robbed me of my dream of being the first to go to the moon? I feared the worst, but I had never heard of any plans for visiting the moon. Probably it had been kept secret like father's telescope; but if I could get a chance to photograph them, it would be a secret no longer. At last, the sphere checked its speed and moved to a lower altitude. My opportunity had come sooner than I had

expected; the sphere was going to land.

With my hands on the control switches and my eyes glued to the eyepiece, I followed the sphere to the ground. After a few moments, I noticed something on the ground beside it. My suspicions were confirmed. They were men! Human beings! But they were dressed unlike any men I had ever seen or heard of. They wore white sun-helmets, similar to those of a tropical explorer, and a loose fitting, one-piece garment, not unlike a mechanic's cover-alls, but much more neat and dignified. Their faces showed a close resemblance to the Nordic branch of the Caucasian race, but they were lighter and more fair than any I had ever seen. This made me certain that they were neither Selenites nor Terrestrials. The rays of the sun, on any latitude of the moon, would tan their faces blacker than that of any negro. Father had told me that no form of life on the other planets even resembled the human race; so these men must have come from the earth after all.

Within a few minutes, more men emerged from the sphere, carrying boxes, some of which were made of this red metal, while others resembled paper cartons. They moved with a perfect naturalness of action, exactly like men of the earth. The low gravity of the moon did not handicap their movements in the least. They were evidently accustomed to it. Thus I realized I had been mistaken; they were natives of the moon after all, belonging to a race, undoubtedly superior to our own.

After twenty or more of these boxes had been piled up, another man, evidently the leader of the expedition, emerged from the sphere, followed by others. At a command from the haughty leader, for whom I had immediately taken a deep dislike, six men appeared carrying another who was bound hand and foot. The victim was helped to his feet and the important person addressed him. For a short time they talked and appeared to be exchanging insults. At last, the brave commander walked up to his prey and struck him several times in the face. His followers appeared to cheer this bravery and laugh at his helpless antagonist, whom he struck in the face again and again. Blood spurted from the defiant face of the helpless one and dripped to his white garments.

With a gesture toward the pile of boxes, the commander entered the sphere, followed by his men, leaving the defiant victim bound hand and foot. The sphere now rose vertically and moved toward the southeast.

My sympathies were all with the helpless man, marooned on the desert, but my curiosity compelled me to follow the sphere which, with increasing speed, was now moving toward Mare Crisium. As it approached that region, it slowed down and appeared to be searching for something. When the herd of flat-footed creatures was sighted, the sphere settled slowly to the ground among them. They did not pay any more attention to it than a herd of cattle gives to a passing automobile. They were neither curious nor afraid. Possibly accustomed to it or it may be that fear was an unknown emotion to them. In a world where they had no natural enemies to fear, it is not strange that they did not know fear.

They paid no attention to the commander of the sphere as he approached them. This great personage was now braver than he had been when he struck the helpless man in the face; as he had left his bodyguard inside the sphere.

He removed from a pocket a lens, with which he focused the solar rays to a point, igniting the thick dry vegetation. He then hurried to the sphere and moved just out of reach of the flames, which were spreading death and destruction among the innocent creatures. After the men in the sphere had enjoyed this scene to their satisfaction, they moved onward

to the southeast and as the moon approached the western horizon and out of my range of vision, the sphere was passing over the moon's eastern limb, heading no doubt for one of their cities on the other side of the moon.

NO sleep was possible for me the next day. But who could sleep with his mind occupied by a strange, cruel drama, enacted on another world? Two mysteries had been discovered and two facts had been learned. The moon was capable of supporting human life and the invisible atmosphere was heavier than our own. This latter was proven by the smoke from the fire in Mare Crisium. With an absence of air currents, smoke rises to an altitude where its specific gravity is equal to the surrounding atmosphere. On the earth, this altitude is often very low, but in Mare Crisium, it rose much higher and faster; it was still rising when it had vanished. The fire demonstrated also that the air contained not only oxygen, but some unknown heavy gas which made its atmospheric pressure probably as great as our own, in spite of the moon's weaker gravity. If these were not suffering from the effects of the atmosphere, I was convinced that terrestrial men could endure it also.

But, if the moon was inhabited by human beings, why had I not found evidence of them before? Were all their cities located on the other side of the moon? And if so why was that? Was the other side of the moon any different from the side turned toward the earth? I could not devote much time to these questions, as a more important question intruded itself constantly. Who was this helpless man, whom I had seen marooned on the desert, bound hand and foot, with nothing but a few boxes? Was he a criminal? Was this a customary method of punishment? It was all so strange, for his enemies looked more to me like criminals than he. Even had he been a criminal, it was beastly to the highest degree to leave a helpless man alone in such condition, under a merciless sun that would beat down on him continually for six more of our days and nights. And, too, fire, kindled so ruthlessly in Mare Crisium, was more the act of a criminal than any administrator of justice. This helpless man then was no criminal, but the victim of a cruel and powerful enemy.

When evening came, I was already waiting anxiously for a sight of the moon. She slowly rose above the eastern horizon. As she mounted higher in the sky, she now showed the resemblance of a human face more than ever. But such a face! It was sad and gloomy, as if brooding over some fearful secret. She and I had something in common—a knowledge that was not shared with anyone on earth. Since early childhood, we had spent thousands of nights gazing into each other's face, a quarter of a million miles apart. I had always told her all my secrets, my joys and my sorrows; now, she was revealing her secrets and troubles to me and I received them with an understanding too deep to define.

When the proper moment arrived, I caught the rays of the shining orb of night in my giant lens. A few minutes later, I was scrutinizing the Sea of Serenity. For some time the density of the terrestrial atmosphere interfered with my vision, but at last I located the pile of boxes, the scene of last night's cruel drama. As a more powerful eyepiece moved me nearer to the scene, I noticed that the boxes had been opened and the man was gone. Had the sphere returned and rescued him? Had his friends found him and taken him to a place of safety? The faint foot-prints in the sand answered my question. He had freed himself and was now walking to some haven of refuge. But where could that be? There were no mountains or craters within hundreds of miles.

I brought the vision closer and found the open boxes to contain small

oblong cakes, while the metal boxes looked like some sort of a can or container for water. Bread and water! Was that all that stood between this unfortunate man and death? I followed his foot-prints for over an hour before I found him, at a point about fifty miles southwest of his starting point. He was now walking across the hot desert, carrying several of the heavy boxes on his back. He appeared to have been walking without rest, since the night before. Fatigue was showing on him plainly and he soon sat down to rest.

For the first time, I observed him carefully. Last night, I was too engrossed with his contemptible captors, to notice what sort of a creature he might be. Tonight he was alone, so he received all of my attention. When his burdens were removed from his back, he took off his sun-helmet and mopped the perspiration from his face, which was now turned toward me.

And such a face! Such a countenance! It can not be described without taking forbidden liberties with the English language. There is but one word that could describe it, a word denied to the description of men. He was beautiful! His features were as smooth and fair as those of a woman, but the general appearance was far from being feminine. His perfectly-formed face bespoke a possession of power, culture and unlimited courage and determination, even in his present peril. There was about him some superior quality, not of the earth, that prohibits comparison with the most perfect sons of Adam.

His tall, well-developed body was just as magnificent, the clothing failing to conceal the fine graceful muscles beneath it. His muscles appeared to be powerful and well developed; but the efforts required to lift his burdens showed that they were either very heavy or there was some natural weakness that proportioned his strength to the lower gravitational strength of his world.

The moon was his home, his natural element. Nature had adapted his muscles to the gravity of that globe and, if he were brought to the earth, it is doubtful if he could have risen to his feet. But in spite of this natural weakness, there was a sublimity of his splendid body possessed by none of our race.

HIS next move was to take a drink of water. He did not seem to enjoy it, for it must have been very hot. He next opened a box and removed two of his cakes, which he ate without any great relish. From a pocket, he removed a small box, took from it something too small for me to see, and swallowed it. He then sat down for a few minutes and rested.

He soon opened another box and removed a map and a strange instrument, with which he took his bearings. He scanned the sky, as if looking for familiar stars or constellations to guide him. With his fingers, he made several marks in the sand, mathematical calculations, I presumed, and appeared to be satisfied with the result, for he immediately took up his burdens and moved toward the southwest.

For hours he continued in what was almost a straight line, walking with a steady, rhythmic stride, that no soldier on parade could imitate. Then he would run for miles at a time, with the grace and untiring speed of an athlete. The merciless rays of the sun and the blistering sands must have caused him intense discomfort, but he never faltered. His marvelous will-power and determination proved to be a merciless taskmaker for his tired and aching muscles. Who could watch such a man without admiration, or feel anything but pity for those aching muscles and blistering feet? But he must not stop to rest; his progress must not be checked for a single instant, no matter how great his suffering.

Suddenly, I wondered where he was

going. Was there an oasis or a city ahead of him? I moved my lens in the direction he was traveling and followed his path for a distance of over two hundred miles before I found anything that might have been his destination. There was a small volcanic mountain, about two miles in diameter and almost a mile high, directly in his path. It is located near what was once the shore of the Sea of Serenity, in an almost level country. My charts of the moon showed it, but it had never been named. It did not appear possible that the unfortunate man could ever reach it, so I named it Mount Despair. Like all other craters and mountains on the moon, Mt. Despair is full of smaller craters, caves and over-hanging rocks. Near the foot of the mountain, a small spring of water flowed down out of the rocks, only to be soaked up by the dry sands a few hundred feet away. Thick grass and some sort of a scrub pine covered the entire lower slopes of the mountain. Several strange birds and small kangaroo-like animals were to be found near the water.

One particular cave attracted my attention. Its entrance, which appeared to be entirely artificial, had something that looked like two doors. This at least would be a great protection against the cold lunar night, if the poor traveler could reach it. But that was a question. During the last twenty-four hours, he had traveled about one hundred miles; but he had not stopped to sleep. Three more days at that speed, and he would arrive at his destination. But what manner of man was capable of such a journey? It was just as difficult as walking across the Sahara, and that is considered beyond human endurance. Was it possible that Nature, in sacrificing lifting power with this race of Lunarites, had compensated by giving them greater endurance? It did not seem unreasonable, considering the length of the lunar day and the low gravity; no doubt Nature had adjusted them to the conditions of their world.

I moved the lens back to the Sea of Serenity and found him still struggling onward with his heavy burdens. Fatigue was showing on him; he could not continue his rapid pace much longer. His face was worn and haggard, the skin cracked and blistered, giving it a raw beefy look; a consequence of the intense solar heat. For over an hour I watched his tortured efforts as he plodded onward. Suddenly he stumbled and fell.

For several minutes he lay where he had fallen, with his splendid face in the sand. What would I have not given for the opportunity to help him, to lift that handsome but haggard face from the dust and give him a refreshing drink of cool water? But I could only watch him suffer, knowing that we were forever separated by a vacuum, a quarter of a million miles wide.

At last he moved. His face was bleeding from a cut above his eyes, and the blood was drying as fast as it flowed. He removed his burdens from his back and washed his face in the warm water, which on earth would have evaporated on exposure to the sun. Then he removed his shoes and bathed his swollen and bleeding feet. After he drank of his precious water, he ate two of his cakes, and from the box of tablets he swallowed one. This was either some powerful drug with great resuscitating qualities, or its purpose was to remove the effects of fatigue and loss of sleep. Almost immediately after taking it, he appeared to be greatly refreshed, his face took on that former defiant expression of determination and courage; all evidence of fatigue seemed to leave him.

After again taking his bearings and consulting the map, he replaced his shoes and with a smile of confidence, shouldered his burdens and resumed his journey. His step was now that of an untired man at the beginning of a journey.

My admiration for this strange

man knew no bounds. Why were men of the earth not like him? Why could they not have his fineness of features, instead of those crude, weak, brutal faces? Why did they not have that godlike intelligence? Was it due to the superiority of his race? Would our men be as splendid as he a few thousands years hence, after we had properly developed?

Or, was there another reason—was it my imagination? Did something cause me to give him credit for more virtues than he possessed, just as father ascribed my entire description of him to my imagination? Was it love? No! Heaven forbid such an impossible thing! What would my father say about such an absurd thing? I would not believe that I was hopelessly and madly in love with the man in the moon!

CHAPTER VI

FOR a moment I withdrew from the eyepiece and looked at the moon with naked eyes. She was now far in the western sky, shining with a silvery radiance, brighter than I had ever seen before. How lovely, how far away she seemed now! That great barrier of distance, erected by nature, seemed greater than ever before, because it cut me off from the only lover I ever had.

If I could have only crossed that void, even for a few minutes, and given him a refreshing drink of cool water or some wholesome, nourishing food, and spoken a few words of comfort. If I could have established even the faintest personal link between us; if he could only know, as he plodded his weary way across that ancient sea-bottom, that there was on another world one watching him and sympathizing with his suffering.

But that could never be. No invention which our race was capable of producing could span that void. I must continue to watch him suffer and die, without his ever being aware of my existence.

After the moon had gone too low in the western sky to continue my observation, I put the giant lens away. I knew that fifteen hours must pass before I could see him again. Fifteen hours of intense physical suffering for him and fifteen hours of mental anguish for me.

My sleep that night was anything but restful; my dreams were anything but refreshing. The man in the moon had captured my mind as well as my heart—my thoughts, either asleep or awake, were constantly of him. For hours I rolled and tossed from one side of the bed to the other, while I dreamed of my man in the moon. He was calling me, asking for water, for food and for protection from the broiling sun. In his voice I recognized the agony of a man hopelessly in love and it gave me a certain degree of painful pleasure to think that my mad passion for him was being returned.

At last another night came and the moon finally appeared in the east. Her ascension into the sky was slower than ever, as if she dreaded showing me the tragic events. I did not need the telescope to see what she was trying to hide. Her face was no longer a perfect sphere, a portion of her eastern limb was already hidden in the darkness of the lunar night. Within a short time, it would creep up and cover the Sea of Serenity. The man in the moon would then find protection from the torrid heat. But I shuddered when I thought of that other extreme—absolute zero, the temperature of outer space. He must reach Mt. Despair soon or perish.

When the proper time came for using the telescope, I first turned it to the eastern edge of the moon, where the shadows of night were approaching. Already the circular mountains around Mare Crisium were throwing their long shadows across the sea-bottom. Suddenly I thought of those poor flat-footed creatures and the ruthless fire. I brought my field of vision down to the disaster and all

that was left of them were black, charred bodies which in the dead ashes gave mute testimony of the terrible tragedy. Those who were still alive sensed the approach of darkness and were hurrying to the shelter of the numerous caves in the mountain. Those who had escaped unhurt were helping their wounded companions in every way possible, This humane act which is uncommon among the brutes, spoke well for their rudimentary intelligence. "I surmised that they stood about midway between that of primitive man and the ape.

But I could not spend much time with these unfortunate creatures, before hurrying over to the Sea of Serenity, where the man in the moon was putting up a desperate but losing fight against the cruel forces of Nature.

I found him about sixty miles nearer his goal. During the last fifteen hours he must have been walking constantly and it was now showing on him. He stumbled and fell every few minutes, under the weight of his heavy boxes, only to rise again and continue his tiresome journey. At last he unloaded his burden, ate his miserable lunch and took his bearings. After swallowing one of those mysterious tablets, he divided his burden and placed half of it on a high rock, where he could find it again. He now shouldered his remaining boxes and moved onward at a greater speed than before.

His progress that night was much slower than usual. His path was more rugged and the lightened burden did not compensate for his increasing fatigue. His drug was losing some of its resuscitating powers, as his body became more accustomed to it. The time would soon come when it would fail to revive him at all and his lifeless form would be lying on the hot sands, shriveled and drying up, under the merciless sun.

During the next seventy-two hours I watched him by night and dreamed of him by day. As his suffering increased, my pity and love for him increased also. By a superhuman effort, he had managed to keep going, though he stumbled at every step and often fell headlong, where he would lie like dead—his tortured face in the burning sands. By a strength of will, I had kept my secret from my father, although at times I wanted to scream out my anguish to him.

How long could I endure this cruel sight? How could I maintain my own sanity? When I looked at a mirror, my image frightened me. I had become so pale and emaciated from loss of sleep and continual brooding that I could not recognize myself. I saw that if this were to continue much longer my fate would be insanity.

This horrible thought brought me momentarily to my senses. "You must stop worrying," I told myself. "Your conduct is unworthy of the man you love. If you can not help him, you can at least help yourself. If he knew of you, would he want you to worry yourself into insanity? A woman worthy of that extraordinary man must be herself extraordinary—one who will not cry herself to death, but follow bravely, face overwhelming odds and at least make an effort to help him. Where is all of that Brewster Grit?"

ON the last night that I saw him, he had reached the limits of physical suffering and endurance. His sun-helmet had been lost long ago and I had seen that once beautiful face undergo the terrible stages of sunburn, until it now looked like a half-cooked steak! But determination and defiance were marked on every parched line. His clothing was tattered and torn to shreds; where the tender flesh had been exposed to the sun, it had first been sunburned, then blistered, now broiled and covered with sand and dirt, where he had fallen so often.

Mount Despair was only two miles away, but he was exhausted. His bur-

dens were all lost. Those cakes and that precious, though scalding water were all gone. His condition was too pitiful to describe. He was now crawling on his hands and knees, but worst of all, his greatest enemy was approaching. Night—with its terribly cold temperature in which nothing could live. Only two more hours remained and but two more miles to go. Was it possible? For an ordinary man —no! For the man in the moon? Time alone could tell.

The details of the remainder of his journey must forever remain untold. I can not endure the torture of describing it. In Hell itself, no more pitiful scene can be expected. His only resource was his admirable grit and determination; his body was exhausted and the sight of his goal did not give him the added strength I had expected.

Thousands of large birds were hovering about the entrance of the caves in Mt. Despair. This was their nocturnal refuge also. If the man in the moon could reach them, he would have food. These birds were unlike any terrestrial birds; the shape of their beaks and feet proved that they were not carnivorous vultures, but some herbivorous type resembling pheasants or chickens, whose skill in flying was equal to that of a hawk. Several small animals, who also sensed the approach of darkness, were hurrying into the caves. But two miles away, in the cool protecting shadow of a huge rock, lay the man in the moon, flat on his face where he had fallen, probably for the last time. Darkness would soon be upon him, but he was unable to continue his journey. His strength was spent and his magnificent determination was broken. Was this the last act—the end of the hopeless struggle in the cruel drama? It was even a relief to think that he was dead and his sufferings were at an end.

With a scream of terror, the truth came to me. He was still alive, but he had rested too long. The dark shadows of night were now upon him. He struggled to his feet, but was unable to stand. His hands and knees were now bruised as badly as his feet; as the shadows of night fell over him, he was dragging his broken body forward, toward the cave in Mt. Despair. The "earthshine" enabled me to see him for a few minutes longer, but our own dawn was now breaking in the east. Every second our atmosphere grew brighter and in a short time it was so dense that I could no longer see anything on the moon. Long after the sun had risen above the horizon, I continued to watch for another glimpse of my lover.

I was no longer a disciple of science, but just a woman—a miserable, heart-broken woman—with all the primitive instincts of one who had just seen her mate dying before her eyes. For a few moments or for a few hours, I do not know which, my actions were not recorded in my memory. My education, my science, my reason and my sanity had left me. I remember wandering aimlessly under the morning sun, but that memory is very indistinct. But I do know that strange noises, crackling and exploding brought me to my senses; I was lying on the ground a hundred feet from the observation car, which was in flames. My first thought was for the giant lens—the "Eye of the World." I had forgotten to put it away, and the intense rays of the sun it collected had fired the car. I was unable to rise to my feet, I struggled, I screamed and then—I fainted.

When I came to my senses, I was in bed and my father was bathing my head with cold water. It was he who had dragged my senseless form from the vicinity of the car and saved the observatory from being a total wreck. The "Eye of the World" was saved, but all the eyepieces as well as everything within the observatory car were completely destroyed.

Three months have now passed since the fire, and I am about restored to my former condition. But my mad

love for the man in the moon will never leave me. It was a terrible blow to my father to think that within a few minutes' time I had almost destroyed his lifetime of labor. He was in about as serious a condition as I, until Mr. W. O. Mitchell, the chief engineer who had installed the machinery and equipment years ago, arrived from Chicago. After an examination of father's blue prints and old plans, Mitchell announced that a new observation car could be built and new lenses for the eyepieces could be made in Paris, although it would be a long time before the telescope could be again used.

Since I have been able to think properly, a new idea has come to me, that has given me considerable comfort. When our astronomers estimated the temperature of the lunar night at absolute zero, they reckoned without the invisible atmosphere. My knowledge of the weight of that atmosphere convinces me that it is capable of retaining much of the heat during the long night and it may be that the temperature never drops as low as the nights in Alaska. The change would not come as suddenly as the lunar darkness, so the man in the moon was probably waiting until the cool of the evening before resuming his journey, when his goal was in sight.

As I look at the moon, she seems to tell me that the object of my devotions is still alive. Our secret has never been told to anyone. This manuscript, therefore, shall not be made public until my greatest ambition has been realized and I have constructed a space-flyer capable of making the trip to the moon. I have discussed the matter with Mitchell and my father, and they believe the human intellect is capable of solving the problem. Father says he is able to finance any device that Mitchell thinks worth while. Somehow I feel that we will be successful and, after all, perhaps Fate has decreed that the greatest, wildest and most impossible dream of mankind—interplanetary travel—should be solved by the female of the species.

The "Brewster Grit" is again at work. My mind is made up and if capital and human ingenuity, working hand in hand, are unable to solve this problem, it will be their first failure. But with my knowledge of the moon, my motives and my incentives, spurred on by love—the greatest and strongest of all human emotions—we shall not fail. Some day my tortured mind and broken heart will find a haven of refuge and a real welcome in the strong, protecting arms of my wonderful lover, the Man in the Moon.

PART TWO

IN the early summer of 1955 the entire world was startled by the unannounced arrival of a space-flyer from another world. As descriptions of the visitor began to come in by radio from different ships on the Atlantic, its identity was established. It was a spherical ship exactly resembling the one that observers at the Brewster Observatory in Arizona had seen, destroying ruthlessly the "Astronaut" on the surface of the moon.

Reports as to the location of the visitor showed that it was moving toward the city of New York. A great alarm, which almost resulted in a panic, spread throughout the city; as memories were revived of how a sphere had melted the steel walls of the "Astronaut," ten years earlier. Anti-aircraft guns were made ready to fire upon the intruder, if any signs of hostility were shown.

It was a night of hectic waiting, during which thousands of New Yorkers fled from their homes, seeking safety in the less-thickly-populated countryside. The sphere was sighted at dawn, apparently motionless, several miles out at sea. At last it was seen moving slowly over New York harbor toward the Statue of Liberty. Then after spending a few minutes examining the latter, the visitor rose to a height

of about four thousand feet and remained motionless in midair. Observers with telescopes saw two windows opened and a white flag, the universal emblem of peace throughout the entire world, displayed. As the news of this spread, the people breathed easier and no alarm was felt as it moved over toward metropolitan New York. A few minutes later another window was opened, permitting thousands of pieces of paper to fall slowly toward the city, and simultaneously another flag was displayed—the Stars and Stripes.

When the pieces of paper were gathered and it was learned that this message from another world was printed in English, the populace was amazed. The emotion of fear was immediately replaced by joy and a celebration was started, which had never been equalled in the history of the city. The message was brief:

"We have come from the moon, on a mission of peace, of great importance to all the people of the earth.

"We, the builders and passengers of the 'Astronaut,' have returned to our own world to establish commerce between the two worlds.

"We regret that we can not make a landing for some time and our story can not yet be told. We consider it your duty to show our visitors from the moon every courtesy. You will be showing them our cities and other wonders of our world, and we may be reached by radio on a wavelength of 230 meters only.

WM. H. HAVERFIELD.
CYRUS LACEY.
LESTER WINTERS."

It was a pleasant surprise to learn that Dr. Haverfield and the others who started for the moon in 1945 were still alive. They had long been given up as dead and had all been forgotten by the public. But memories were quickly revived as the news of their return was spread through the entire world.

Just as the celebration was reaching its height, the sphere rose to a higher altitude and moved swiftly toward Philadelphia, and after a brief visit, departed for Washington, where it descended slowly to within a hundred feet of the earth, on the lawn of the White House grounds. A small metal cylinder was dropped to the earth, addressed confidentially to the President of the United States.

In Cleveland, the sphere paused over the roof of the *Herald's* building and dropped a bulky manuscript, the story of the "Astronaut's" voyage, written by George L. Davis, a former reporter for that paper. The earlier material in this manuscript had been published in 1944 and 1945, while the "Astronaut" was being built and prepared for a voyage to the moon. As the younger people could not remember that period, and many of the older men and women had forgotten the details, it was printed in its entirety in the *Cleveland Herald* and all other papers owned or served by The Universal News Syndicate.

The Manuscript of George L. Davis

CHAPTER I

IN writing a narrative of our recent adventures and present troubles, one must start at the beginning. But where was the beginning? I used to think it started in the gymnasium of the Belmont University, although Dr. Haverfield says it started somewhere in Arizona and there was a woman at the bottom of it; just as if this were the first time trouble was started by a woman. But now I prefer to think the trouble all started when Jules Verne wrote his story of a trip to the moon. He started men to thinking and, after fiction writers had been solving the problem of interplanetary travel for three-quarters of a century, a group of people got together with ambition enough, money enough, inventive genius enough and just the

proper amount of audacity and dumbness to attempt it. And it was just my luck to get mixed up with them and go along on the first voyage.

Regardless of where the idea originated, my first knowledge of the proposed trip to the moon came to me in Belmont University, sometime in November, 1942. As a reporter for the *Cleveland Herald*, I used to go there to cover a football game. On this particular day after I had wired my story to the paper, I hunted up a boyhood friend of mine, who was a senior at Belmont and a quarterback on the football team.

Cyrus Lacey and I had been inseparable friends ever since we entered the first grade in school together, and many were the mischievous pranks we had played. And as this was the first time we had met in months, a celebration was necessary, even though Belmont had lost the game. At Cy's invitation, I secured permission from the paper to spend several days at Belmont, and I went with him to all his classes.

One morning the students assembled in the gymnasium, which was also used as an auditorium, to listen to a short talk from Dr. William H. Haverfield, the president of the university. And so far as it concerns me, here was the place that all the moon trouble started.

"Students of Belmont," Dr. Haverfield began: "It is not in the least farfetched or fantastic to say that we are this morning standing on the threshold of a new and greater era. History constantly repeats itself and the earth is about to undergo a change similar to, but greater than, the Renaissance of the Fifteenth Century. Following the discovery of the western hemisphere, Europe emerged into a greater intellectual era, out of which grew our present civilization.

"But great as has been our development, we are still in the dark ages as compared with the new era just ahead of us. The discovery of a new world would mean more to us today than the discovery of a new hemisphere meant to Europe in 1492. If you look at the sky on a clear night, you will see that the universe is full of worlds to be discovered. All we need is a new Christopher Columbus—a man of that confident, fearless and adventurous type, who is not afraid to venture into the unknown.

"The Columbus of the twentieth century has arrived. He is now begging for ships and begging for men from the highest sovereign power of the earth—The Human Intellect! Let me read his plea as it now appears in the current issue of *The American Scientist:*

" 'A Challenge to the Scientific World.

" 'Our race has long boasted of its progress and achievements, the greatness of which can not be denied. Because of our supremacy over all other forms of life and our conquest of the forces of nature, we have been called the Masters of the World.

" 'But are we the masters of the earth or merely her temporary and compulsory tenants? Is our race doomed to remain on this planet forever, when there are others in our own solar system and thousands, probably millions in our universe, many of which are capable of supporting life? For ages the challenge has been flung at us and for ages it has passed unnoticed. Is there a man living today who can look at the stars without feeling an urge to answer this challenge? Has the time come when we can solve the problem? Or shall our generation pass it on to our children to solve?

" 'Man has answered the challenge of the sea, the air and even the frozen poles of the earth, and conquered. Has not the time arrived for us to accept the challenge of space and first the nearest heavenly body—the moon? The writer of this article proposes a voyage to the moon as our first attempt at space-flying.

" 'A bank account of enormous proportions is ready to finance the ex-

pedition to the limit. There is but one thing that delays preparation—the lack of scientific plans for making a space-ship. These plans can come from only one source—the human intellect. A prize of one million dollars is offered for such a plan.

" 'This prize will be paid for the best plan for a rocket, projectile, sphere or any kind of a ship of space capable of making a voyage to the moon, moving about at will over the surface of that body, making a landing when desired and returning to the earth in safety to its passengers.

" 'Any means may be used for propelling and controlling the space-ship; but the merits must be tested and proven before the prize money will be paid.

" 'If a new idea, hitherto unknown to science, is submitted, this offer will not interfere with the inventor's right to patent it and market it elsewhere. This offer is made for the privilege only of using it, and no further rights are expected.

" 'A liberal reward is also offered for any idea that may be utilized in a space-flyer, which will add to its safety or serve as a means of propulsion, even though no complete plan is submitted.

" 'Capital will be provided for experiments and the development of any plan that appears promising; but such experiments must be made under my supervision or at the expense of the inventor.

" 'Last of all, the inventor must have confidence enough in his plan and its safety to be one of the passengers on the first voyage.

" 'All plans must be submitted to Box 67, *The American Scientist.*'

"NOW," continued Dr. Hoverfield, "here is a chance for someone to become a millionaire and do a great service to humanity at the same time. It has long been the dream and ambition of man to send a rocket to the moon; but it has never been attempted. Writers of fiction have developed many interesting plans for interplanetary travel and they alone have succeeded. As usual, those fellows never get very far ahead of the actual fact. Strange and fantastic as their fiction may seem, the old saying that 'truth is stranger than fiction,' still holds true. The things yet to be developed by modern science are stranger and greater than human imagination has yet pictured. The submarine of Jules Verne was less than half a century ahead of the actual invention. To say that the time has arrived when his voyage to the moon is to be accomplished, may sound like the statement of a dreamer or harebrained fanatic; but such is far from being the truth. The next decade will prove it; the writer of the advertisement that I have just read will probably be successful, for the greatest handicap, the lack of funds, is removed. I always believed that, if Wall Street could be convinced that Tycho* was a mountain of gold, capital would be provided and the problem of interplanetary travel would be solved in a hurry. This modern Columbus seems to have the necessary funds and his offer will attract the scientific minds of the world.

"Atomic power is yet to be developed, but when it is its uses will be greater than that of electricity. But I have my doubts if it can be done in time to win this prize. We have never yet demonstrated to my complete satisfaction that light-pressure really exists. Manifestations attributed to it may be due to something else. Arguments in its favor are no stronger than those against it. Radium is too scarce, even if we knew how to use it for space-flying. Gravity control is like perpetual motion; just a pleasant dream, impossible at present. Future generations will no doubt learn how to control gravity, but at present no one knows just what gravity is; so there is nothing tangible to work on.

* Name of a lunar mountain.

"By far the most reasonable plans yet proposed are the rockets designed by such men as Dr. Goddard of Clark University, Fritz Van Opel, Max Valier and Hermann Oberth of Germany. I make no secret of the fact that I intend to experiment on a rocket myself and submit a plan for a space-flyer. It would please me if every student of Belmont would give this voyage to the moon some serious consideration and work out a plan for a space-flyer. Use any force that suggests itself, and you may succeed in giving mankind the greatest gift of the twentieth century."

After this amazing lecture, Lacey seemed to be a different man. He was no longer sociable and I felt that I had overstayed my welcome. Although he denied having any plan for a space-flyer, I was much inclined to doubt his word.

When I returned to Cleveland, I reported Dr. Haverfield's lecture to the editor. He did not see any news value in it; but asked me to keep an eye on Belmont University and report anything that looked like news.

CHAPTER II

IT was not until January, 1943, that I heard anything more about the proposed voyage to the moon. In a letter from Lacey, he said he was expecting an engineer from Chicago to investigate his plans for a ship of space. When I showed this letter to the editor, he asked me to go to Belmont and come back with a story. He promised to take the matter up with the Universal News Syndicate, controlled by the owners of the *Herald*, who would probably offer financial assistance for exclusive rights to publish news of their progress and permit a reporter on the trip to the moon.

When I arrived at Belmont, I told Cy Lacey of the offer I was authorized to make. He said I could take the matter up with the engineers at a meeting to be held at the university; where his plan was to be considered together with one submitted by Dr. Haverfield.

At the meeting, Cy and I were the last to arrive. Dr. Haverfield seemed to be the presiding genius, as he gave us an introduction to the others who were seated around a long. table Messrs. W. O. Mitchell and George Herrick, of the engineering firm of Mitchell and Herrick of Chicago, were introduced first. A young lady, whom I thought a secretary or stenographer in the employ of Mitchell and Herrick, was introduced as Miss Dorothy Brewster. Mr. Lester Winters, a chemist from St. Louis, who also had submitted an excellent idea, was introduced next. After Cyrus Lacey had been given a chance to show his dignity, the intruder was asked to introduce himself.

"I am George L. Davis, a reporter for the *Cleveland Herald* and a personal friend of Mr. Lacey. I am here at his invitation; but if you have any fears that I will publish anything against your will, I will gladly retire. But before I go, I have a proposition to make. My paper offers financial assistance for exclusive rights to obtain and publish news of your progress and to send a man along on the voyage."

"My friend," said Mitchell, "I fear we must ask you to retire. You may tell your editor that our capital is quite adequate. Furthermore, we do not desire any publicity."

"If you fear that my friend will tell his paper anything against your will," Lacey interrupted, "you may set your mind at rest. If he promises to return with no story, he will do so. I know the man better than you do."

"That may be true, Mr. Lacey, but I, too, know something about reporters. Nothing interferes with their loyalty to their paper."

Miss Brewster, who was sitting between Mitchell and Herrick, had up to this time been silent. She now surprised us by rising to her feet and

settling the important question at hand.

"Mr. Mitchell, it is my request that the reporter be permitted to remain."

But, Miss Brewster, I was thinking only of your interests when I asked him to retire."

"I thank you for that, Mr. Mitchell, but lack of publicity was my father's greatest mistake. If he had not worked in secret, he would not now be resting in an unknown grave and our position would be different. However, I have a word to say to the reporter, and this holds good for the rest of you, too. Not a word of our progress is to be given to the public without my permission. I want to censor every statement that is given to the press. It would be a great relief to me to know that there is but one reporter on the job."

"I thank you, Miss Brewster," I replied: "You will have the opportunity to censor all my stories, if I am permitted to remain."

"Since it has been decided that Mr. Davis is to remain, we shall proceed with our business," continued Mitchell: "First, I would like to ask if you have ever given much serious consideration to the telescope with a lens one hundred feet in diameter, which was reported in several of the scientific magazines last summer. Dr. Haverfield, what did you think of it?"

"I considered it a crude sort of a hoax when I read it. An attempt to repeat the excitement caused by the 'Moon Hoax,' over a century ago. But, fortunately, the modern public is not quite so gullible. It has all the characteristics of modern fiction; the inventor works in secret, which is absurd in the twentieth century. The casting and cooling of such a lens is another absurdity. Furthermore, as atmospheric interference increases with the size of the lens, with one of that size, it would be looking through a thick fog, through which the light from a star could never penetrate. And to make the fictitious element of it more perfect, a fire fortunately broke out when no one was looking and destroyed all the evidence before the claims of the inventor could be verified."

A SMILE broke out, which soon developed into a hearty laugh. Dr. Haverfield had made a hit and was very proud of it. But it was not appreciated by all. Mitchell and Herrick were not laughing, neither was Miss Brewster. Her eyes snapped like lightning, her fists clenched and she rose to her feet angrily:

"It may surprise you to know that this telescope was and will again be a reality. It was far from being a hoax for two reasons: First, it really did exist and I have the proof of it with me here. Second, no hoax is complete without an attempt to force it upon the public. The attempt was lacking. The authors of these articles in the magazines drew upon their imagination for most of the details and I neither authorized nor sanctioned the stories. No one can blame Dr. Haverfield for his opinion; because thousands of others share it with him.

"The telescope was designed by my father, William A. Brewster, who built it with the assistance of a score of expert lens makers from Paris. My friend here, Mr. Mitchell, designed and installed the machinery for moving and controlling the lens. Of course, there were hundreds of laborers; but they never knew the real purpose of the work.

"Furthermore, despite what Dr. Haverfield says, the fire did not destroy all of the evidence. The eyepieces only were destroyed, and they are now being duplicated by their original makers in Paris. Mr. Mitchell and his assistants have repaired the damage done to the machinery and, as soon as the new eyepieces arrive, the observatory will again be as good as ever.

"But it is not the purpose of this meeting to boast of my father. We have a task of our own to accomplish.

I must describe conditions on the surface of that so-called dead world, as they were revealed to me through the big telescope. Present-day scientists are very much mistaken as to the moon; and I have found many errors in their so-called established facts. First of all, the moon does have an atmosphere, denser and heavier than our own, although it does not contain the same elements. It contains an unknown gas, which is both heavy and invisible, as well as oxygen, or something very similar to it. But it is entirely lacking in hydrogen, which makes our atmosphere visible. The lunar atmosphere is entirely invisible and astronomers can not be blamed for thinking that the moon floats in a perfect vacuum when they look at it with their smaller telescopes.

"Water is not lacking, but it is very scarce. At the base of some of the lunar mountains, I have found small springs which flow for a short distance, only to soak into the ground again and return to the underground pool from which they came. No evidence of evaporation is found and I am inclined to think it is impossible for water vapor to mix with that invisible atmosphere.

"Vegetation is always to be found near these springs and of course animal life. This vegetation is not green, like our own well-watered grass, but is of a brown sun-scorched hue. It appears in the form of grasses, vines and small trees, resembling the scrub pines of Greenland and the cactuses of Arizona and Mexico.

"Animal life of the strangest forms lives here, too. Australian animals look strange to the native of North America, and those of the deep sea are stranger still; but lunar animals are even more peculiar. Bipeds are more common than quadrupeds; instead of describing them, I shall show you some pictures I took with the aid of the telescope."

Opening a briefcase, she withdrew several photographs and handed them first to Dr. Haverfield, who examined them one at a time and handed them to the rest of us.

"Of all things! The five-toed eohippus! And he is walking on two feet, too. How remarkable! And what is this? He looks like a black-skinned turkey as nude as if he had just escaped from a meat market! Ha! Ha! Here is the funniest freak of all, Miss Brewster, what do you call this fellow?"

"I have given him the name of *Selenitus Latipedatus*, she answered.

"Ha! Ha! Look here, Lacey: the 'Flat-footed Selenite'!"

Lacey's loud laugh aroused my curiosity, but the picture aroused my sense of humor. Here was a hairless, apelike creature, lying flat on his back with his feet raised high in the air. His feet were actually so large and wide that he was using them for an umbrella to protect his body from the sunlight. The next picture showed the same fellow walking on his hands or front feet, with his wide umbrella-like feet above him. But the real laugh came in the next picture, where he was flying through the air, using his feet as gliders, reminding me of a movie I had once seen of the Thief of Bagdad riding a magic carpet.

After Dr. Haverfield had remarked on the adaptability of such creatures to lunar conditions, low gravity, long, hot days and long, cold nights, he asked Miss Brewster if she had ever seen any evidence of human beings or of a civilization.

I thought I saw a faint blush come to her cheeks as she answered: "I have pictures here of the ruins of old stone buildings, evidence of a vanished civilization. But as for men; do you imagine that Nature, working under lunar conditions, with lunar elements, would duplicate the same process of evolution which she used on our world to produce our race? Do you think a human being is adapted to lunar conditions? No terrestrial animal is found on the moon; why do you expect to find men there?"

"The human race is adaptable to any conditions that approximate those found on earth," replied Haverfield. "As for animals, what about the five-toed eohippus and this fowl that is evidently related to the turkey?"

"That is a mystery that we may hope to solve when we get to the moon."

CHAPTER III

THE discussion continued until late in the night, when the meeting was adjourned until the following morning. For the first two hours of the second session, Miss Brewster did most of the talking. As I was prohibited from taking notes, I do not remember everything she said. Furthermore, I was not very highly interested in technical discussions, and paid more attention to her blond, wavy hair, sparkling blue eyes and small, beautiful face, which could not but reveal her sparkling intelligence. Her graceful and perfect form and rare beauty merited a comparison with Venus, the goddess of beauty; while the ease and familiarity with which she discussed obscure subjects, made me think of her as a personification of Minerva, the goddess of wisdom.

By the time she had finished talking, I knew that I had met the perfect woman. The symptoms were not hard to recognize; I was in love with her. But to win a girl so much superior to myself was another problem. From the start, I felt that my love was hopeless. Her scientific education and unusual intelligence were a barrier that a common person like myself could not surmount. It made me feel like a mud turtle in love with a bird of paradise.

Her description of the lunar landscape, a rocky, barren desert surface, which with the exception of a few oases, covered the entire surface of the moon, was very realistic. She also told of the hot sultry days and cold nights, each two weeks long, during which it would be almost impossible to live without some artificial protection. But her convincing proof of the density of the atmosphere, so heavy that smoke rose rapidly for miles before it was dissolved, showed plainly that human beings could endure it with no ill effects.

"Four-fifths of the moon's visible hemisphere is incapable of supporting life," she continued. "We must have a means of travel after we get there. The rocky surface prohibits the use of an automobile or motorcycle. Horses and camels could not endure the scarcity of water and the lunar animals would probably prove undomesticable; so we must travel through the air. None of you knew that the moon had an atmosphere, so it is not strange that your plans did not include a safe means of travel.

"Over two hundred plans were submitted, not one of which was perfect, but we think that by combining three of them, a space-flyer can be made. We will now consider the three best plans and tomorrow we shall start designing the first ship of space in the history of the world. One hundred and fifty-two of the plans were for a Goddard rocket. We did not select Dr. Haverfield's plan because it was superior to all others; for it was almost identical with several. But we did think that his mature years, wide experience, marvelous education and standing among the leading educators and men of science throughout the nation, made him the proper type of man to have as captain of our expedition."

CHAPTER IV

DURING the days that followed, plans, drawings, calculations and models were made and tested, either to be approved or discarded. It was finally decided to build a Goddard rocket of steel, making it as small and light as possible. It was to be launched into space by an electromagnetic gun, such as Lacey pro-

posed. It was hoped that the large initial velocity, together with the ray of propulsion and possibly a few explosions to send the rocket into that zone where the lunar gravitation was stronger than the terrestrial, would enable it to reach the moon. Explosions would then be used to decelerate the speed and bring it down to zero when making a landing.

For some mysterious reason, Miss Brewster was very careful about letting certain information reach the public. She prohibited my telling about any of her discoveries of lunar conditions, such as the presence of an atmosphere, lunar life and water. In describing the ship, nothing could be said that would indicate the facts revealed by her huge telescope. The only reason she gave for this partial secrecy was that all the scientists of the country wanted to dispute and argue with her; and she did not care to discuss it with them, since she did not have her telescope ready to back up her claims. As a matter of form, she accepted a nominal sum from the Universal News Syndicate for exclusive rights of publication, on the condition that I was to be the only reporter assigned to the story.

This was a great thing for me. I was no longer a cub reporter, but a world-famous journalist. I do not claim that this was due to any particular ability of my own, but to the story that I had to tell. Astronautics were beginning to attract attention throughout the world, and my censored stories were published in every paper owned and served by the syndicate.

Rival papers resented this unfair treatment as they called it and lost no opportunity to take a rap at the *Astronaut*, as our vehicle was named. "The word '*Astronaut*' means navigation between the stars," one paper pointed out. "This contraption expects to go only to the moon. A more appropriate name would be the 'Lunanaut' and its builders should be called the 'Looneynuts'." This brought much applause from certain types of readers.

Because of the elimination of vital parts in my censored stories, the public and even the greatest astronomers in the country did not know that a lunar atmosphere existed. They could not be blamed for thinking we were crazy. It was rumored that it was all a publicity scheme of some kind, but as the work continued without interruption, the mystery deepened. A theory was advanced that Miss Brewster was spending a lot of money in order to get a screen contract; but that was disproved when she turned down offers that would make most women think they had reached the height of success.

Rival papers called several great scientists to their aid and many were the authoritative statements made about our plans and ambitions that seemed to justify the name of "Astronuts," the name by which we were called on the stage, in the street and in the humorous magazines. I begged in vain for permission to combat them and tell of Miss Brewster's discoveries. She said that all great men who ever added much to the knowledge of the world, had tried to argue with their scoffers. The only argument that could convince them was actual results. Dr. Haverfield begged for permission to get into the argument; he enjoyed an argument better than an Irishman enjoys a fight. He was as uncomfortable as a dog wearing a muzzle among a pack of wolves.

Nonsensical ridicule had absolutely no effect upon Miss Brewster. She thought our engineers were competent enough to know what they were doing, and the views of people of lesser importance did not interest her. But she compromised with Dr. Haverfield. He was permitted to write articles that succeeded only in arousing the fighting instincts of his opponents; since the vital parts of his articles were censored. This was just what Miss Brewster wanted, because she could get the views of other

learned men, which given in the heat of an argument, represented their best efforts. It was through this source that much valuable information was obtained and several mistakes were avoided that had been contemplated by the "Astronuts."

CHAPTER V

BY the time the term ended at Belmont, the plans were all complete. Dr. Haverfield had resigned his position as President of the University and was given the dignified title of President Emeritus; as he had concluded the thirty-second year as head of the college he had practically built. Lacey was graduated with an M. E. degree. Winters, Herrick and Dr. Haverfield began work on the *Astronaut*, while Lacey and Mitchell, with hundreds of helpers, began work on the electromagnetic gun in the mountains of Arizona, near the town of Brewster.

In order to hurry the job along, as many men were employed as could be used. The magnets were easier to build than anyone had imagined; and with unlimited capital and an abundance of labor it was not very difficult to build the cement gun, which held the magnets in place. An ideal location was found along the mountainside, where it was possible to point the gun at the proper angle that would send it to the point in the moon's orbit, where the moon was calculated to be when the *Astronaut* should land. The action of the magnets on all sides of the gun caused it to be suspended in the center, producing no friction as the *Astronaut* passed through at an ever-increasing speed. Two small grooves were made on opposite sides of the gun, through which winglike projections, extending the full length of the rocket, were intended to slide. These would give the opposite effect from that received by a bullet from the spiral rifling of a gun-barrel, and prevent the *Astronaut* from whirling as it traveled through space.

When the magnetic gun was first planned, it was first necessary to set the date for the start of the journey and compute the time to the exact second, in order to aim the *Astronaut* toward the proper point in the skies. After a careful study of the moon's motion, the time of the departure was set for June 27, 1945, at about 9:30 p. m. But the gun and the rocket were both built before the specified times, and wires were strung to six of the greatest power plants in the west. Their combined capacity, converted into direct current, was needed to give the magnets the required power. When the gun was used, the cities served by these power companies were in darkness for several minutes.

As a test, a projectile was made of the same size and shape as the *Astronaut*, and filled with sand until it had the same weight. When it left the muzzle of the gun, headed for empty space, its velocity was estimated at eighty-three miles per minute; quite enough for the *Astronaut*, considering that other means of propulsion were available later. At a local observatory we watched it until it disappeared far beyond the earth's atmosphere, probably to explode in space or be crushed by a meteorite.

If the magnetic gun was a notable achievement of modern engineering, the *Astronaut* was nothing less than a masterpiece. As it lay on a railroad flatcar, waiting to start its extraordinary voyage, it presented a very flashy appearance. Its steel sides were painted a bright scarlet, with portholes, periscopes and explosion chambers, which covered the rocket on all sides, trimmed in blue. The rudders at the rear end, as well as the narrow finlike wings which ran the entire length of the car, were yellow. This combination of colors, while not appealing to the aesthetic senses, made the rocket easier to locate by the many telescopes that would try to fol-

low its flight. A powerful searchlight at the tail would make it still easier to be seen.

In shape, it resembled a long artillery shell or rifle cartridge, about the size of a modern railway coach. Its nose came down to a point, in order to resist the friction of the atmosphere, while the rear presented a flat surface, covered with explosion chambers. The thousands of people who looked at it never suspected that two powerful, but tiny airplanes were dismantled and concealed inside the *Astronaut*. The airplanes, as well as the lunar atmosphere, had been kept secret.

The *Astronaut* was equipped with everything an up-to-date space-flyer needs. The room in the front end of the car was thickly padded. Luxurious padded chairs were arranged for each of the five passengers—Miss Brewster, Dr. Haverfield, Lacey, Winters and myself. These chairs could also serve as beds, and, judging from the many springs, air cushions and padded upholstering, one would think it impossible to experience a shock of any kind in them.

The adjoining room was intended to serve as a kitchenette and storeroom for food supplies. Miss Brewster had volunteered to see that we did not get hungry at any time during the voyage. Judging from the boxes, barrels and other containers, fastened to the walls, she had overdone her duty. Dr. Haverfield protested against such a large supply, but she had her own way.

"In case things do not go exactly as planned," she said, "and we are not able to make the return trip as soon as expected, you will thank me for bringing these extra barrels of corned beef and bags of beans and rice."

The third room contained the controls for the explosives, the observation windows and periscopes which would give an unobstructed view in any direction. Here were also located the double portholes for throwing out refuse, the oxygen tanks, storage batteries for furnishing current for lights, fans, stoves and heaters and ignition for the explosives. The rear half of the rocket was filled with gasoline to be used as airplane fuel and the other explosives for the rocket, which was estimated to be enough for the entire trip.

Everything was securely fastened to the walls to prevent moving about when the speed of the rocket was being changed. The center of the *Astronaut*, for the entire length, was kept open and a ladder extended through this central passageway in order to enable one to climb from one end to the other.

The walls were made of three air-tight thicknesses of steel, with a vacuum inside each section of the wall. Thus the passengers were enclosed within a double "thermos bottle"; a protection necessary against the intense cold of outer space, which was estimated at 459 degrees Fahrenheit below zero, as well as against the heat that would be generated by the rapid passage through the barrel of the gun and through the atmosphere. The windows and portholes, which were all double, were made of two layers of wire glass with a layer of celluloid between each layer. This reduced the danger of broken windows and escaping air to a minimum. As an additional protection while going through the gun and the earth's atmosphere, a metal cup-shaped covering was placed over the windows on the outside. The edges of these coverings were made of rubber, the air was partly exhausted and this partial vacuum held the covers in place until the *Astronaut* had passed through the atmosphere. As the air pressure outside became weaker, that within the cup-shaped covering became great enough to force the covering off the window. In case a window was broken by a meteor or anything else, Lacey had devised a clever device by which the outrushing air would cause a cov-

ering to rise and cover the window from the inside.

Lester Winters had his black metal screens in readiness to place over the windows on the inside, when the proper time came to use them. We had no way of telling just what power we could expect or what speed they would produce. But it was proved on paper that the ray of propulsion could carry us to our destination; while the explosives could be held in reserve for steering and braking purposes when we made a landing, as well as to give us a kick-off when we were ready to return to the earth.

WHEN everything was in readiness and we were waiting for the proper moment to start, our real worries began. To Dr. Haverfield, the most fearful thing was the lunar atmosphere. For thirty years he had believed and taught that the moon floated in a perfect vacuum, and he could not convince himself that he was wrong. Lacey worried about those black screens. He feared that they would be worthless and the initial velocity of his gun would fail to carry the *Astronaut* to the moon. Winters was afraid some accident would happen while going through the magnetic gun, and refused to be convinced of its safety. Miss Brewster feared that the explosives would not make a very good brake and the rocket would crash into the moon with such force that the rocket and all it contained would be instantly annihilated. Even if we did make a safe landing, she doubted if our knowledge of aviation would be sufficient for flying on a strange world, where the force of gravity was much different and no one knew anything about atmospheric conditions.

But I thought the real thing that was worrying them was the same thing that was worrying me, although I would not mention it—"cold feet." I thought they secretly wished they were following the example of Mitchell and Herrick, who decided to stay in the world where Nature had placed them. But there was something else that worried me, although I did not dare to mention it to anyone. What was going to happen if four men and one woman were stranded on a strange world? I loved Miss Brewster enough to give my life for her, but she had no love to return. Lacey and Winters were as much her devoted slaves as I. They, too, had probably found that their love was hopeless. As for Dr. Haverfield, one would imagine him immune to the charms of a young woman; but I actually believe he would have jumped through a hoop for her, if she asked it.

Four men in love with one woman, a quarter of a million miles away from civilization! How much time would it require to wash off the thin varnish of civilization and leave nothing but primitive passions? How long before we would fly at each other's throats and battle for the possession of the only woman on a strange world.

AT last the big day arrived when we were to enter the *Astronaut* and leave Mother Earth and all the comforts of life behind, and trust to God and the *Astronaut* to carry us safely across the great void which no one had ever before attempted to span. Judging from the number of people to see us off, one would think that the entire population of the world was there in the valley and on the mountainside. Every race and nation on the globe was represented. Hundreds of policemen and National Guardsmen were necessary to preserve a semblance of order, and to prevent the mob from tearing the *Astronaut* to pieces and carrying it off as souvenirs.

During the intervening past weeks the public attitude had suffered a change and the cheers and absence of jeers proved that they were not so incredulous as they had been. Those who had been poking fun at the *Astronaut* for two years, were here now

cheering the "Astronuts." Outwardly, they were hoping for the best, but it is doubtful if there was a soul present to whom the success of the venture was assured. As for myself, the music from every band in sight or hearing was necessary to keep up my spirits, and prevent my heart from freezing completely.

The zero hour had been set at nine hours, twenty-two minutes and ten seconds past noon. Mountain Standard time, on the 27th day of June, A.D., 1945. At that instant a locomotive would push the flat-car on which the *Astronaut* was resting toward the first magnet of the huge gun, giving it an initial speed of about fifty miles per hour before the magnets did their powerful duty. The gun was aimed with the greatest care, to make sure that the *Astronaut* would leave the earth at an angle of sixty-four degrees, at a westward velocity of more than 700 miles per hour to offset the motion of the earth on her axis in that latitude and a vertical velocity approximating 3600 miles per hour, or 60 miles per minute. Thus the actual velocity would be at least 61.9 miles per minute or 3715.6 miles per hour.

During the afternoon and evening preceding the zero hour, a ceremony took place, which included the christening of the *Astronaut* and prayers by a dozen leaders of various religious denominations. Speeches were made by famous orators and by the "Astronuts" themselves. Every word was broadcast by two networks of radio stations to all parts of the country. I was given the job of broadcasting our experiences inside the *Astronaut* as we started, and for as long as there was any possibility of being heard on the earth.

I shall not attempt to repeat all the eloquent oratory; but a short speech by Miss Brewster deserves a place in this manuscript. As she rose to the platform, the moon appeared above the eastern mountain tops. For several minutes she could not speak because of the cheers from the crowd, who now caught their first glimpse of the daring girl whose popularity and fame surpassed that of any member of her sex that the nation has ever produced.

"Fellow citizens of the earth," she began, "we are about to start on a voyage to our sister world, which is now rising above the distant mountain tops, apparently unaware that she is about to receive visitors. It may surprise you to know that I firmly believe she is expecting us. Look at her closely. Can you not see the outlines of a human face? Do you see that smile of satisfaction and happiness she is wearing tonight? It is to be found nowhere else except in my heart. The moon and I have been friends for a quarter of a century; I have told her all my troubles, secrets, joys and sorrows since I was a child.

"When I looked at her through my father's giant telescope, she revealed her secrets, her troubles, joys and sorrows to me. I have held these secrets sacred and told but a few of them to that small group, whom you call the 'Astronuts.' After I have started for the moon, there will be no further need for secrecy. I have written these things for your benefit and Mr. Mitchell knows where they may be found. Within a few days the newspapers will give them to you, and you will know that our voyage is not quite as blind and foolish as it appears. As for my fellow voyagers, I am saving a surprise until we reach the moon.

"My many friends, I have enjoyed every minute of the twenty-six years I have spent on our world. Tonight I am leaving it, and I hope never to return. To start to the moon makes me very happy; but to leave the land of my birth makes me very sad. But my greatest regret is that my father could not have lived a few years longer, so that he could see the achievement of the greatest ambition of my life. And now I must tell you good-bye; and may God continue to protect you forever."

CHAPTER VI

AT nine o'clock we five "Astronuts" stood on the top of the rocket and smiled at the clicking movie-cameras. Probably I should have said four-fifths of us succeeded in smiling; but the one-fifth represented by myself was unaccustomed to such publicity. It was neither stage fright nor cold feet, but a combination of both, and other embarrassing emotions of fright, that seemed to tell me that I had better call my share of the voyage off. I was trying to summon enough courage to announce my decision, when the clicking cameras brought a mental vision to me:

I was sitting in a large theatre, in which a newsreel carrying my terror-stricken features, was being shown to the public. I overheard some lady say to her escort:

"There's that yellow reporter who backed out!"

I decided that I'd rather be a quarter of a million miles away.

At ten minutes after nine, the pictures had been taken and the seven bands had united as near the *Astronaut* as possible. Following one of Miss Brewster's whimsical impulses, the united bands began playing one of her old favorites—"Over the Hills Comes the Sunrise." I could not agree that this song was exactly appropriate for the occasion; but she said she wanted the last sounds she would probably ever hear on the earth to be this old favorite. Some one in the crowd started singing and the multitude followed his example as we waved our farewell to our friends and entered the *Astronaut*.

All sounds become inaudible as the heavy doors were closed and fastened from the inside. After making a final inspection to see that everything was as we left it and no stowaways were hiding inside, we fastened ourselves in our padded seats and waited for the start. At the proper instant a slight jar and vibration told us that we were in motion. The speed increased as the engine behind gathered power. Suddenly we entered the field of the first magnet. The *Astronaut* shot forward with a violence that would have knocked us from our seats, if proper precautions had not been taken. Before we had a chance to wonder what had happened, the shock was repeated.

After the third magnet had given us its power, we were unable to count the rapid jerks. It seemed that I was lying flat on my back with my feet in the air and my body weighed a ton. Each jerk doubled this sensation. I could not raise my hand, it was too heavy. My eyeballs seemed to be driving themselves into my skull; my chest was so heavy I could not draw a breath. My head ached; blood vessels seemed ready to burst. I was sick at my stomach; I wanted to vomit but the contents of my stomach were too heavy. I was choking. Tons of invisible weight pressed against my body; the agony in my abdomen doubled a dozen times each second and I felt that I was slowly being crushed beneath my own weight. My heart fluttered and I thought the weight of my other organs would cause it to stop entirely.

But still the weight increased as the speed of the *Astronaut* continued to accelerate. I could not turn my head to look at my fellow passengers, who were no doubt suffering as much as I. It seemed to take years to go through that gun. I could no longer see, my vision was blurred, everything was out of focus and whirling like a top. My head ached and my brain felt like a mass of molten metal. The weight no longer increased by jerks, but a steady increase as if I were being buried under tons of sand. For some time I was unable to breathe—I was suffocating!

Suddenly this all stopped; instantly my weight became normal or less than normal, it seemed to me. I drew a breath of air and tried to look at my friends. I was dizzy and the *Astronaut* seemed to be turning end over

end. After a strenuous effort, I succeeded in adjusting my eyes to the point where I could see. My companions were all so still and silent and I had visions of a mad journey through space in the ghastly company of four corpses. At last Winters moved his head; he was trying to look at me, but from the way he was rubbing his eyes, his vision also was imperfect. My back ached and as I thought it was broken I had no desire to attempt to move.

Soon I heard a groan. Lacey was beginning to come to his senses, but Dr. Haverfield and Miss Brewster lay as if dead. Fearing for her safety, I succeeded in releasing myself and with painful efforts began crawling over to her. But Winters had reached her first; he had raised her head and was asking for water. I hurried down the ladder to the kitchenette to get some water from a two-gallon container fastened to the wall, but found that it had failed to stand the strain of the acceleration. It had burst and the water had rushed to the rear of the rocket, soaking part of the explosives. Thinking of the larger barrels, I went to the next room and was relieved to find everything there intact.

When I returned with the water, Miss Brewster had opened her eyes, Lacey was struggling to his feet and Dr. Haverfield, whose age was against him, was in a serious condition. For almost an hour we were all too sick to try to see what progress the *Astronaut* was making; and I suddenly remembered that the world was waiting to hear my voice over the radio.

IT had been my intention to watch the earth as we left it to see if it really did seem to drop out from under us, as all fiction writers said it should. But I was too sick to care whether it fell away from us or was following us. The other passengers were in the same condition. I was once seasick on Lake Erie; but that experience was mild compared to space-sickness. For now, everything possible was out of tune. All parts of the body pained; even the bones felt as though they had been crushed. But the worst pains seem to settle in the chest, abdomen and head. Lacey says space-sickness is the wrong word; as this sickness was caused entirely by the acceleration of the *Astronaut* as we passed through the gun. It began to get better as soon as we left the gun and began to travel at a fixed speed.

Dr. Haverfield seemed to suffer the effects of the acceleration more than we younger passengers did. Winters, being the strongest, and I, the lightest, were the first to recover. Lacey and Miss Brewster were not far behind; but Dr. Haverfield, who was at last able to take command, continued to suffer with pains in his head and side during the entire journey.

It was over an hour after we had left the earth that Winters and I began to take some observations. The moon was shining with a brightness such as I had never seen from the earth but the earth was entirely invisible, except for a gray twilight in the west. Having left the earth at night, we were still within its shadow. This appearance of twilight, however, was caused by the rays of the sun refracted through the terrestrial atmosphere. As we watched it, it seemed to grow brighter and spread from the north to the south. This was proof that we were still going and had not started to fall back to the earth. We had no idea what time it was, as every watch on the *Astronaut* had stopped at 9:25. We had been careful to select non-magnetic watches so that they would not be damaged by the magnetic influence of the gun; but the acceleration had done its work. Mine was stopped so completely that I never did get it to run again; but the others, being more carefully selected, were uninjured.

When Lacey had revived enough to take some interest in what was going

on, he had to examine both the moon and the earth. But Miss Brewster was satisfied to sit in her seat and watch the moon.

"I'd enjoy nothing better than just sitting here, watching the moon increase in size, for the remainder of the journey," she said.

At last Dr. Haverfield staggered to his feet and looked at the moon. He then looked at the earth through a periscope and did not seem to think the gray light was bright enough.

"I do not think we have the speed we expected. We seem to be standing still and that is impossible in outer space. If we are not going ahead, we are falling back to the earth. If that should happen, our enemies would have the laugh on us indeed. All we would have succeeded in doing would be to break the altitude record, and I do not care to sacrifice my life for that distinction alone. I think we should have some explosions on the rear to see if we can not get out of the earth's shadow and give the black screens a chance. Lacey, give us the explosions; Winters, get your screens in readiness to use as soon as the sun appears; Davis, see what the electric thermometer says."

"It now reads 432 below and is still falling," I reported after examining the instruments as I had been instructed.

"Cold enough to freeze hydrogen, but it will rise when we leave the shadow. The walls of the car still retain a little heat, or the thermometer would read 459 below. How does that western horizon look now? I think it is about time for the sun to appear."

A bright silvery light was now visible on the horizon which extended for over a thousand miles. Far to the west, bright clouds of gold and orange could be seen. As we watched it, the light grew brighter and presently a thin golden line came into view.

"That is the reflection of the sun's rays on the Pacific," I said: "As we get farther away from it, that line will grow wider and soon the sun himself will be seen."

For a few minutes we scanned the western horizon, but the silvery ring failed to grow wider. I reported to Dr. Haverfield, who asked Lacey to see how far we were away from the moon. Lacey did this by measuring the apparent diameter of the moon. Since the angles subtended by bodies are in proportion to their distance, it was but a problem of simple arithmetic to obtain our distance from either the moon or the earth. When his calculations were complete, he reported to our sick captain.

"Not close enough for the time we have been traveling. That gun should have been ten miles longer to give us the proper speed. Davis, do you see anything of the sun yet?"

"No," I replied, "and that silvery ring seems to remain about the same."

"Then we are falling back!" Dr. Haverfield cried: "Give us some more explosions, boys; we must get out of this at once!"

Miss Brewster broke her silence with a remark that was quite a contrast to Dr. Haverfield's excitement:

"I see no cause for alarm. Those explosions are unnecessary; they should be saved for a time when we will need them worse. That silvery ring now extends almost from the north pole to the Antarctic circle. It is not the reflection of the sun's rays in the Pacific, as Davis said, but the refraction of the rays through the lower atmosphere. It looks much brighter than it really is, because of the contrast with that black pitchy darkness seen throughout the entire sky. We will see the sun before his reflection appears in the Pacific. Let us be calm and take things easy, for we are about to see something that was never seen on the earth: sunrise in the west. I think a little song would be good for our morale; how about 'Over the Hills Comes the Sunrise'?"

By the time the song had ended, the sun's thin disc was shining

through the earth's atmosphere at the extreme western horizon. This news was carried to the captain, who was still unwilling to leave his easy chair.

"Sunrise in the west! How I wish I felt like going to the window to see it."

Miss Brewster had placed a large chart of the moon on the wall; and we compared it with the surface of the moon, whose large craters and mountains were quite visible. She told me the names of the craters and seas and pointed out the spot on which she wanted to land. Another sea bottom looked better to me, but she said its surface was more rugged and irregular. Furthermore, there were no mountains with caves in which to hide when the long lunar night arrived with its intense cold.

The moon was so interesting when she showed it to me and her company was so delightful that I determined to make the conversation last as long as possible. It is seldom that one meets a woman who knows as much about any scientific subject as she knew about the moon. She was the only person alive who had ever seen life on the moon, the only one who had ever examined the surface of our satellite and discovered the invisible lunar atmosphere.

I could not conceal the fact that I was desperately in love with her, and I thought this would be a good time to take advantage of my rivals.

"Dorothy," I said, "why are you so cold toward me? Why can't you return a little affection?"

"Mr. Davis, how many times have I told you to call me by no other name than Miss Brewster? I will not permit any of you to get familiar enough with me to call me by my first name. Never let me hear you call me Dorothy again."

I always had the name of being a ladies' man, but there was something about this girl that made her wishes respected. I could not even try to batter down her resistance. She was the first of her sex to make me feel bashful; that was probably due to the fact that this was the first time that I was ever really in love. But at any rate, I continued to call her Miss Brewster, and shall continue to use that name throughout this manuscript, regardless of all laws of journalism.

Her anger was of short duration; two minutes later she was describing the Sea of Serenity as if nothing had occurred between us. Who could fail to show respect for a woman like that?

After several hours of conversation, during which the moon increased in size until every crater and mountain was distinctly visible, Miss Brewster remarked that she was getting hungry. She went to the kitchenette and prepared some sandwiches and coffee, after which we called our fellow passengers.

DR. HAVERFIELD'S headache was not greatly improved. He remained in his seat and asked Lacey to take our bearings and see what progress we were making.

"We are going too fast!" Lacey shouted as soon as he saw the moon. "Winters, remove those black screens at once and look at the earth. See how large it is now."

After making a few calculations, he reported to Dr. Haverfield: "We are now 70,000 miles from the moon and 180,000 miles from the earth. We are far from being on a straight line between them; we have been thrown off our course! We have been going too fast! The ray of propulsion did it! We are lost! We will soon cross the orbit of the moon; yes, we will be thrown beyond the orbit of Neptune! Why did we ever trust Davis and Miss Brewster alone?"

"Let me see for myself," Dr. Haverfield replied: "It was foolish to trust a reporter to guide the *Astronaut*. It would have been all right with him if the planet Saturn had whizzed past the window. I am afraid there is no hope for us now; we will

be carried far beyond the moon's orbit."

"Be patient, Dr. Haverfield," said Miss Brewster: "Eat this sandwich and drink this coffee, and you will feel better. Probably you can save us yet."

"I can't be bothered with food now; we are in danger—a terrible danger! every second is precious. Boys, give us some explosions on the nose and the side of the rocket opposite the moon and don't be afraid to make them strong. Winters! where are you? Get those infernal screens off the window immediately! Let me alone, I want to make some calculations. This headache is driving me crazy. Miss Brewster, get me some more aspirin."

When Winters and Lacey had removed the screens, a great difference was felt in our weight at once. While the ray of propulsion was accelerating our speed, our weight was about normal, but now the acceleration stopped and our distance from the earth was so great that the force of gravity was very slight. When the explosions were started, it was necessary to hold to our seats to keep from being thrown against the opposite wall.

We ate our sandwiches in silence, and our coffee refused to stay in the cup. The *Astronaut* rocked and swayed under the terrible reaction of the explosions. The moon was almost full when we left the earth; but now we were so far to one side of it that it appeared but little larger than a giant half-moon. The earth was more than a crescent; the coast of Asia, the Philippine Islands and the continent of Australia were plainly visible. It would have been a very beautiful sight if it were not for the fact that we were lost and too terrified to enjoy it.

Miss Brewster was getting impatient too, as her selected landing place on the moon was now far on the eastern side of the moon, almost out of sight. It looked as if it would be impossible to land there; but Lacey thought it would be very lucky if we made a landing on the moon at all. Presently Dr. Haverfield stopped figuring and looked at us. His calculations were finished and he was ready to report. Eagerly we waited for him to speak, but it was fully two minutes before he opened his mouth.

"The ray of propulsion has been trying to drive us away from the sun with the velocity of light," he said at last: "If our weight had been zero and those screens had covered the entire rocket, we would now be traveling at a velocity approaching that of light. But, fortunately, the combined gravity of the sun and earth have been pulling us back and we did not use but a fraction of the sun's power. We will now use the screens on the side of the rocket opposite the moon; some sunlight is coming in there and probably, with the aid of the explosions, we can drive the *Astronaut* into the gravitational field of the moon. We will be safer then, but probably our landing will be made in darkness on the other side of the moon."

During the next two hours, we were all busy trying to change the course of the *Astronaut*. Black screens were used on various windows, and the explosions kept hammering away like riveting hammers, filling the heavens with smoke. Miss Brewster and I, who had both been awake for over thirty hours, ate a light lunch, strapped ourselves in our chairs and went to sleep.

CHAPTER VII

WHEN I awoke a few hours later, Dr. Haverfield was again asleep. Miss Brewster, who had risen earlier than I, was now helping Lacey and Winters look at the moon. The explosions had ceased entirely.

"Where are we?" I asked.

"We crossed the orbit of the moon a few minutes ago," Lacey answered. "She is now about 10,000 miles away,

coming toward us like a cannon ball. We will be out of her path when she gets here, but within her gravitational field. We may make a landing on the dark side; or we may go completely around the moon like the Verne projectile, and return to the earth."

"But no one was hurt when the Verne projectile landed in the Pacific."

"If we fall back to the earth, we will have to use a lot of explosions if we expect to be playing dominoes when they find us," he answered.

"Is there nothing we can do?" I asked.

"Nothing but wait. I think we should try to get closer to the moon but Dr. Haverfield says he thinks we are at the proper distance to let Nature take care of us."

The moon quickly covered the sun and all was dark as the *Astronaut* sped onward, entering the shadow on the other side of the moon.

It was unfortunate that the first human beings to be on the other side of the moon could see nothing but darkness. But even in the dark, one can see much if he keeps his eyes open. An active volcano, shooting flames and sparks into the sky, surprised us all, who had been of the opinion that there were no active volcanoes on the moon. A moment later a meteor appeared directly below us, followed by another an instant later, sending a shower of sparks like a rocket.

"That is the first evidence of that invisible atmosphere, Miss Brewster," said Dr. Haverfield. "Those meteors behaved exactly like meteors do at home, except they seemed to burn faster. Probably there is more oxygen in the lunar atmosphere. But what mystifies me is that volcano!"

"Are you positive that it was a volcano?" asked Miss Brewster, who was trying to look at the dark surface of the moon.

"What else could it be?"

"Let us suppose a space-flyer from another world should visit the earth and pass over Pittsburgh or Youngstown at a distance of but a few thousand miles. They might think they had seen two volcanoes."

"Do you mean to advance the theory that we saw a city or a steel mill?"

"We may see stranger things than that before we get back home. Truth is still stranger than fiction," she replied as unconcerned as ever.

Dr. Haverfield could do nothing but sit with his mouth wide open, amazed at this strange girl who was now singing her favorite song.

"IT is about time we saw the sunrise ourselves. It has been twenty minutes since we entered the shadow. Perhaps the boys have succeeded in slowing down our speed."

We continued to watch for the sun, but there was no sign of it. Fifteen minutes later, when it did come, it was unannounced. As suddenly as if someone had turned on an electric light, the sun appeared on the edge of the moon with a brilliance never seen from the earth. As soon as the bright crescent of the moon appeared, Dr. Haverfield calculated the distance at a trifle over two thousand miles. This was just about the distance of the moon's diameter; but as his calculations gave him the distance from the center of the moon, the radius of 1080 miles could be deducted, making the distance about 900 miles.

"We are falling onto the moon!" Lacey exclaimed: "Maybe I had better stop my explosions and start them on the other side to check our fall."

"Don't you dare!" shouted Dr. Haverfield. "The moon is now traveling away from us and our distance of a thousand miles will soon be lost. Continue the nose explosions. Give us some at a forty-five-degree angle and bend our path into a smaller orbit around the moon."

A few minutes later, our distance was estimated at 1500 miles, but as the explosions continued, this loss

was soon made up and we were getting closer again.

"Here is a dangerous point," said Dr. Haverfield: "We are headed directly toward the sun and the earth. Their combined gravitation, in addition to our own speed, may draw us entirely away from the moon; for the gravity of the latter is very weak. Use a little light-pressure to offset this danger and check our speed."

"Do you see that dark circular depression just ahead of us?" asked Miss Brewster: "That is Mare Crisium, the home of the flat-footed selenites. We want to land about a thousand miles farther west, in the Sea of Serenity."

"Our speed must be checked, or we will go beyond that sea bottom and make an unpleasant landing in the Apennine Mountains. We are now about five hundred miles from the surface and our speed is about one and one-half times that of the moon; which makes it about 57.6 miles per minute with reference to the earth. But we are now going in the same direction as the moon, so with reference to that body, we are traveling about twenty miles per minute or one mile in three seconds. That is too fast to attempt a landing. Winters! What is the matter with you and that light-pressure? I asked for it some time ago!"

"We're coming, sir," he answered as he saluted the captain and placed a screen over a window. Instantly the effect was noticed. We were now in the field of the lunar gravitation, that of the earth was almost negligible and our bodies did not seem to weigh over ten pounds. As soon as the screen was in place, it seemed that the *Astronaut* had suddenly stopped; our bodies and every loose object were thrown violently to the front end of the car.

"We can't have much of that!" said Dr. Haverfield: "We do not know how to use the ray of propulsion. Every time we try it, we get into trouble. Put your screens away and we will try something milder. Lacey, how about some dynamite explosions?"

The moon was now so large that we could no longer see all of its surface from one window. We had crossed Mare Crisium and Mt. Proclus. The Sea of Serenity was directly ahead of us, with the lofty peaks of the Apennines looming in the distance. The few minutes during which we had used the black screens had checked our speed and thrown us nearer the surface. But our captain ordered more explosions to lessen our speed still more. He wanted to descend to within a few thousand feet of the highest craters and he did not want much speed when we passed them.

At last, when we were about forty miles high, the *Astronaut* started behaving rather strangely. She was now drifting along with her rear end pointed toward the moon, but started to rock and swing like a pendulum. At last she turned completely over on her side and kept on going nose first.

"What has happened?" I asked: "Did we hit a mountain top?"

For several minutes no one could give any reason for this strange behavior. It was Miss Brewster who broke the silence:

"We have entered the moon's invisible atmosphere. The wings and rudders on the rear have raised that end of the car and we are now traveling nose first as all rockets should travel."

"Yes, and did you notice how the *Astronaut* swings and rocks like a barrel floating in the water?" asked Dr. Haverfield: "I want everyone to get busy and carry our heaviest weights to what is now the bottom of the rocket in order to give us more equilibrium."

As we obeyed this order, I could not help noticing that our luggage was much lighter than when we left left the earth. I had no trouble in lifting a barrel containing sixty gallons of drinking water. It did not require but a few minutes to move our entire

cargo, but in the meantime, the *Astronaut* was more than half way across the Sea of Serenity. The Apennines were raising their lofty peaks directly across our path and a crash seemed inevitable.

"All the nose explosions you can give her!" shouted the captain. "We must stop this rocket before we cross the sea bottom."

His orders were instantly obeyed. From ten points on the nose of the *Astronaut,* explosions were started with no thought of the consequences. Within ten minutes we were within twenty miles of the mountains.

When Dr. Haverfield noticed the ease with which we could control the *Astronaut,* he called to Miss Brewster:

"Where did you say you wanted to land?"

"At a point about forty or fifty miles from here, over in that direction. Do you see that crater top on the horizon? It is just straight ahead and a little to the right; do you see it? That is Mount Despair. I had hoped to land within walking distance of it."

"A few nose explosions, Lacey, and an occasional one on the left. Keep your altitude and go ahead. The rest of you get your telescopes and strap yourselves in your seats, we are going to make a landing soon."

We lost no time in obeying this order and two minutes later we were anxiously scanning the horizon with our telescopes.

"Look for a large cave at the base of Mt. Despair," ordered Miss Brewster.

A few minutes later, Winters, who was looking out a window on the opposite side, announced that he saw smoke.

"Where?" we all asked at once.

"About two miles over there to our right. I think I see something moving too."

Instantly all glasses were turned to the direction indicated and we distinguished a half-naked man, standing on a high rock, waving a burning grass torch!

"Of all things! A man!! A human being!!!" exclaimed Dr. Haverfield. "Who do you suppose has come here ahead of us? Make a landing at once."

HERE was one order that could not be instantly obeyed. We were about one hundred and twenty-five feet high and moving at about sixty miles an hour. In his excitement, Lacey increased the nose explosions and stopped those on the under side of the rocket. With no support beneath it, the *Astronaut* dropped to the ground. A drop of 125 feet on the earth would have been fatal to everyone, but with the low gravity of the moon, it was less severe. We hit the surface at the speed of about thirty-six feet per second, which is about the equivalent to a fall from the height of twenty-five feet on the earth.

The shock from falling was not as disastrous as our horizontal speed of about sixty miles per hour. The *Astronaut* bounced at the first impact, but the next time, she landed on her nose. The nose explosions only added to the confusion and the *Astronaut* turned completely over and kept on going with unchecked speed. The friction between the car and the moon was not enough to check her momentum, so she continued to keep on going, turning end over end and rolling like a log for at least a mile, to end in a mighty crash into a rock about forty feet high.

This severe landing was much as I had expected, but that did not lessen the severity in the least. Two wooden barrels of water were burst open, as well as some of our food supplies; although an examination of the latter proved that no damage was done. The biggest wonder of all was the fact that the heavy load of explosives did not ignite and blow us all into eternity.

The nose of the *Astronaut* was

smashed, the rudders were torn off and almost all of the windows were broken and we were breathing lunar atmosphere before we realized it. The air had a chemical odor of a kind that even Winters could not identify; we did not like it, but as we continued to breathe it, it became less objectionable. For several minutes we felt too dizzy and shaken up to move, but at last Miss Brewster called:

"Is anyone hurt?"

One by one, we answered "No."

"Then let's get out of here."

She was the first to disentangle herself and crawl out of a broken window and set her feet on the surface of the moon. She attempted to walk, but the low gravity caused each step to carry her several feet into the air. But the time her four companions had crawled outside, she had jumped to the top of the *Astronaut* and from there to the high rock, where she stood with her binoculars at her eyes, scanning the horizon.

"Gentlemen, Christopher Columbus has been outdone!" she cried: "We have discovered a new world for our earthly endeavors. We shall call this rock San Salvador, and carve our names on it and in history at the same time. Hurrah for the twentieth century!"

"Hurrah! Hurrah for Miss Brewster!" shouted Lacey, Winters and I at one breath. But Dr. Haverfield did not join in the cheering. He called to Miss Brewster to come down. When she had obeyed, he pointed to the *Astronaut*, which was a total wreck, and said:

"I think it more fitting that we follow the example of our Pilgrim Fathers. Let us kneel beside the wreck of our *Mayflower* and give thanks to our Creator for bringing us safely across this uncharted void. This rock shall be named 'Plymouth Rock' and it shall serve as a monument to our voyage as well as an inspiration for the generations to come. My friends, let us pray."

CHAPTER VIII

WE had been so severely shaken up by the unexpected landing that we men had not yet attempted to walk. Our exit from the rocket had been made by a painful crawl. Our emotions, at the thought of the success of our voyage, had crowded all other thoughts from our minds; but now, our prayer being over, I rose to my feet for the first time. In attempting to walk, I was due for another surprise. I had expected the low force of gravity to make walking difficult; but I never imagined that it could be impossible.

When I rose to my feet, I unexpectedly rose into the air, only to fall in a more awkward position than when I had started. Rising more carefully the next time, I managed to get up without an accident. My first step lifted me into the air again, but I came down without falling. Throwing caution to the winds, I jumped as high as possible, which was almost thirty feet, and landed without any noticeable jar.

Lacey and Winters followed my example, and for several minutes we amused ourselves with our new jumping ability. The sensation was delightful; we thought we knew the sensations of a bird while flying, as we rose to a height of twenty-five feet and slowly dropped to the ground. Dr. Haverfield attempted to follow our example; but his headache had not left him and he was compelled to give it up and crawl inside the *Astronaut*.

Several minutes later, Miss Brewster made her appearance in an entirely new costume. It was an exact duplicate of the aviator's uniform she had worn during the entire journey, except that it was as white as snow. Her head was bare and her pretty bobbed hair never looked more beautiful. She carried a cute little white umbrella and had suddenly mastered the art of walking. Her movements were perfectly natural and she walked with a grace that was even more ad-

mirable than it had been at home. She carried a large but neat pack on her back, and in my estimation, no daughter of Eve was ever more beautiful.

"Haven't you boys learned to walk yet?" she asked.

None of us could answer. We were so bewildered and surprised by her sudden change and mastery of the walking problem. Even Dr. Haverfield crawled out of the *Astronaut* to see her do the impossible. Her radiant beauty and exquisite loveliness only confused us and made us feel ashamed of the progress we had failed to make.

"Winters, where did you see that man signaling to us?" asked Dr. Haverfield.

"He was standing on a high rock about two miles to our right, when the *Astronaut* first struck the surface."

"I'd like to know just who that fellow is, where he came from, how he came here, when he came and why," said Dr. Haverfield.

"Is there anything else?" she asked.

"Yes, several things, but I'm afraid you can't answer them."

"Probably not; you must not expect too much from the inferior sex. When you boys learn to walk, you may take our baggage over to Mt. Despair and place it in the largest cave you can find on the side next to the earth. I am going for a little walk and may not return for a long time. Don't be uneasy, as I know this section of the country quite well."

With that she started out along the path of the rocket where it had dragged itself over the hard rocky surface of the dead sea-bottom.

"Come back here!" shouted Dr. Haverfield: "Boys, we can't let her go alone; it is not safe. Who knows what manner of savage that half-naked man may be?"

"Probably he has the same thoughts about us," she retorted as she started to run.

"Go after her, boys, and fetch her back! We can't let her risk her life alone."

This was a command that we found impossible to obey. Each step threw us high into the air, only to end in a tumble. While we were spending our time in picking ourselves up after each fall, she was hurrying over the ground with the ease, grace and speed of an antelope. Within ten minutes, she had disappeared below the horizon and we were compelled to give up the chase and trust her to her own resources, in which she seemed to have great confidence.

FOR some time we struggled with the difficult problem of walking, but could not master it. The gravity was so slight that we felt as if we were submerged in water; our feet would not stay on the ground. We expected to learn to walk within a short time, but after struggling for hours, under the hottest sunshine we had ever experienced, we were exhausted. We decided to enter the *Astronaut*, get something to eat and try to make up for some lost sleep.

"That girl is a mystery to me," said Dr. Haverfield when we had returned to the rocket: "Not only is she unlike the frivolous members of her sex, but her mentality surpasses ours. That telescope did not teach her how to walk; she knows every detail of this part of the moon well enough to have been here all her life. The ease with which she walks gives her secret away—she has been here before."

"Yes," Lacey answered, "and did you notice the direction in which she went? Did you notice the powder and female war-paint she had on her face? She has never used any of that stuff since we knew her. Who knows what is in those boxes? You can't tell me it is all food; there is enough there to feed a regiment for months. Did you notice how excited she was when we saw that wild man with a torch? She has gone to meet him; she knows who he is all right."

"Of course she does," Winters added. "She never told anyone but us of this lunar atmosphere. She would not let Davis publish anything about

lunar conditions, and she admitted in her speech just before she started from the earth that she was keeping the surprise of our lives for us."

"To be sure, she knows him," I added, "or she would not have gone to meet him alone. She did not want us in the way, that's all. But if you mistrust her or think she is going to desert us or double-cross us, you are sadly mistaken. I trust that girl above everyone else. She admits she has secrets; but we are keeping a secret from each other and are not honest enough to admit it. I love Miss Brewster; Lacey, you and Winters love her, too. We three are ready to fight each other for her; now be honest with yourselves and admit it. But has she ever given any of you any encouragement? Of course not, no more than she has given me, which is none! She just simply does not care for any of us in that way, but she is the best friend any of us ever had. She is just like a married woman of the old-fashioned type, who has no affection for anyone except her lawful mate."

"That is quite true, Davis," said Dr. Haverfield. "I have noticed that you three have been secretly in love with her for some time, but I fear that your cases are as hopeless as mine. I love her, I am not ashamed to admit it. At first I tried to love her as a daughter, but she is the perfect image of the woman I loved and lost thirty years ago. Her resemblance brings memories of her mother and I can not think of her except as the same person. I have never told you; Miss Brewster does not know it; but her mother and I were once teachers in the same high school in Denver. She rejected me and married William Brewster, the inventor of the giant telescope. I heard that she had died when Dorothy was born; but I never heard any more of them until I met Dorothy that day at Belmont. I recognized her instantly, but have kept my secret to myself. I could never marry Dorothy, even if she would have me; it would be too much like marrying my own daughter. But I will protect her as a daughter as long as I live, and you men are too civilized to let personal jealousies interfere with your friendship. We are but a small party, strangers in a strange world, and nothing could be more absurd than jealousy over a love affair that is hopeless for all. Let us be quiet now and sleep until she returns."

It was several hours later that I awoke. It was very hot inside the *Astronaut,* but it was hotter outside. Perspiration had been flowing freely and we were all wet. I decided to go outside and see if I could see anything of Miss Brewster. I took a telescope with me and jumped to the top of the rocket, and from there to the top of Plymouth Rock, and scanned the horizon.

Far in the distance, I could see something moving. I recognized Miss Brewster and that strange man coming toward us, walking very close together. He had one arm about her shoulder and was carrying her umbrella. The other arm was in violent motion; Miss Brewster's hands were moving in the same manner. They were trying to talk and could not understand each other, so signs and gestures were necessary to convey their ideas.

Here was a surprise and a mystery. Who was this strange man, who in a few hours had done something that all men of the earth had failed to do —to win the heart of Dorothy Brewster? What sort of a woman was she to repulse all the advances of the men of her own world, only to surrender completely to the first half-naked, brown-skinned savage she had met on the moon? Should I wake the others? No; the affairs of the heart are too sacred to expose. She need not know that I had seen her; I would jump to the ground and wait until they came nearer before calling my friends.

We had all been awake for a long time and were busy examining the

wreck of the *Astronaut,* when the strange couple finally arrived. They were now walking hand in hand and were almost upon us before we noticed them. We were too astonished to speak, as we looked at her strange companion.

He looked more like an animated bronze statue of an ancient Greek god than a man. His physique was faultless, his muscular development was marvelous. There was something about his face that instantly told me that we were in the presence of a superior being. I felt like a four-flusher in his presence, and my companions, even the learned President Emeritus of Belmont, appeared abashed before him.

At close range he did not appear to be the same savage we had seen trying to signal us with a grass torch some time ago. His dress was of the simplest type possible. It consisted of a single piece of a poorly-woven grass cloth, about a foot wide and twenty feet long. It was thrown over his left shoulder, wrapped several times about his body, once around each thigh, and ending by being tied about his waist. His hair was long and crudely cut behind his ears, but his face was as smooth and beardless as a woman's. He appeared to be a highly-cultured person, who had been depending entirely upon his own primitive resources and cunning for some time.

"FRIENDS," spoke Miss Brewster, "I want you to meet the Man in the Moon. Four years ago I saw him through my father's telescope; but, until today, he has never seen nor heard of any of us. He does not know our language, but is learning it fast and we must learn his as soon as possible. He belongs to a race of men who live on the other side of the moon and we must get our airplanes ready and return him to his people.

"When I first saw him he was marooned on the desert bottom of the Sea of Serenity. I watched him as he walked hundreds of miles, suffering the agonies of death at every step until he reached Mount Despair.

"I planned and financed this voyage for the primary purpose of rescuing him and I can not conceal the fact that my peace of mind, my future happiness and everything that makes life worth living depended upon the success of the expedition. It was the proudest moment of my life when I can stand before you and introduce Baklo, the Man in the Moon."

"Boys," said Dr. Haverfield, "let's give three rousing cheers for the plucky Miss Dorothy Brewster and three for Baklo!"

When this was done, she led Baklo to Dr. Haverfield and repeated the words "Doctor Haverfield."

Baklo nodded and then Miss Brewster pointed to Dr. Haverfield's right hand. Baklo seized it in both of his and shook it with more sincerity, but less grace than any of our home town politicians. The same introduction and acknowledgment was given to each of us and we welcomed this strange man to our midst.

Our efforts at walking amused him greatly; but he did not do anything to ridicule us, any more than we ridiculed his appearance. Winters and Lacey beckoned him inside the *Astronaut,* where they selected some clothing for him and remained with him to show him how to use it. When they did make an appearance some time later, Baklo looked like a different man; no one could now mistake him for a savage.

While Baklo was dressing, Miss Brewster told Dr. Haverfield and me a long story of seeing this man marooned by a group of men who traveled in a spherical ship. She showed us some pictures which she had formerly kept hidden and told of several trips she had secretly made to the Brewster Observatory after the telescope had been repaired, and of seeing Baklo and knowing that he was alive before we started.

CHAPTER IX

DURING a period equal to two terrestrial days and nights, we were busy carrying our food supplies and other baggage to a large cave in Mount Despair. There were times when we agreed that this cave was of artificial origin; but there were also times when it appeared to be the work of nature. The entrance was entirely artificial. A large arch built of enormous blocks of stone, resembling no stone that I had ever seen on the earth, supported two massive stone doors on hinges of some unknown substance that looked more like stone than metal. The masonry bore the evidence of extreme age; they were probably very ancient when the Pyramids of Egypt were being built.

For ages the cave had been the nocturnal haven of birds and beasts of some unknown species, and it was not until we were far from the entrance that a place was found fit for human habitation. Here, Baklo had by hard work and uncanny ability made a home and workshop for himself, using the primitive means at his disposal. By a knowledge of chemistry that mystified Winters, he had a method of extracting oil for lighting purposes from a tree that appeared to be similar to our pine family, although the resemblance was not too marked. From the same tree and other strange forms of vegetation, he produced a food that we thought was very unpalatable. This, together with what food had been left him by his persecutors had served to keep him alive, and combined with water, constituted his entire food supply. He did not seem to relish his former bill of fare after he had a sample of food prepared by Miss Brewster. Apple pie and barbacue pork sandwiches pleased him immensely, and even Miss Brewster found it impossible to get him to sample other food that might prove inferior.

Somewhere near the cave he had located deposits of ore from which, by a primitive means of smelting, he had fashioned tools, cooking utensils and strange but simple pieces of machinery. From the tough fibres of a lunar grass, he made threads which were later woven into cloth. The experiences of Robinson Crusoe were no more interesting than the handiwork of Baklo.

He took a great interest in the objects within the *Astronaut*. The padded chairs were very strange to him. The airplane engines, which Lacey was trying to repair after the crash, aroused both his admiration and his contempt. Gasoline was unknown to him, but, when he found that it could be used to make a light superior to his tree oil, he considered it very valuable. There was nothing about our explosives to arouse his interest; but the radio was the most interesting thing of all.

Miss Brewster, who could make him understand better than the rest of us, tried to explain its use to him. He appeared to understand her and a delighted twinkle came to his eye as he began taking it apart. Since it could no longer be used for communication with the earth, we made no objection when he asked to take it to his own workshop for further study.

Miss Brewster and I helped him carry it to the cave, where he began to work in earnest. All of our attempts to use it brought nothing but terrible squeals and screams of static which aroused the contempt of Baklo. He indicated that no radio should behave like that and began tearing out coil after coil, only to rewind them after a manner of his own. While Lacey, Winters and I were trying to repair the damage done to the airplane motors, Miss Brewster and Dr. Haverfield were watching this lunar mechanic working with a terrestrial radio.

The sunshine was so bright and hot that we found it inconvenient to work outside, so we were most always in cramped quarters inside the *Astro-*

naut. There were times when we were tempted to abandon the job as hopeless, but, when we considered that it was the only thing we could depend on to get away from that lonely spot, we decided to exhaust every effort before we abandoned it. At times Baklo would come to us to see what we were doing, but he never remained very long. On one occasion he tried to make his wants known but we could not understand him. He asked to make a search himself, which he was permitted to do. I went with him to see that he did not get into trouble with the explosives. He searched for over an hour and at last he found a small handbag that belonged to Lacey. He tried to open it; but it was locked, so we asked the owner thereof for the key. Lacey obligingly opened it for him and Baklo went into a frenzy of delight when he found three spools of fine insulated wire inside. Lacey indicated that he could have them, and Baklo broke all speed records in getting back to the cave and his own workshop.

WHEN we reached the cave, Baklo was in a frenzy of delight. He had succeeded in making the receiving set work and was actually getting music from the loud speaker. At first I thought we were listening to a terrestrial station, but a strange unearthly strain of the music convinced me of my error. After spending a few hours in sleep, Baklo began working with the sending apparatus. We became interested when we learned that he was trying to get in touch with his people. Miss Brewster told us, if we were able to communicate with them, there would be no necessity of repairing the planes.

But at last his task was completed and he began talking into the microphone. Within a few minutes he was answered by a voice in his own language. He was delighted beyond all description as he began a conversation with this unknown person somewhere on his own world.

When the conversation ended about an hour later, he tried to tell us something. Miss Brewster interpreted him as saying that his friends were coming, and we were all to leave the cave together in a lunar ship and go to his people on the other side of the moon.

Every few minutes he would go to the microphone and speak a few words, but it was several hours before he received the expected message that filled him with excitement. He hastened to fill an extra lamp and carry it to the entrance of the cave. This was a crude sort of a beacon to guide the rescuing party to the cave.

It was now about twenty-four hours after the lunar sunset and the night was very beautiful. The earth was but little more than half full and it occupied the same place in the sky that it had ever since our arrival. Its diameter was about four times that of the moon as seen from the earth, and it appeared much brighter than the moon had ever been. Because of its larger size, the earth at this phase was flooding the surface of the moon with a soft light about eight times as bright as moonlight. The night was cool and pleasant; the thermometer registered sixty degrees, which was quite a contrast to the intense heat of the lunar day.

CHAPTER X

WHILE we were admiring the beauties of our world, Baklo sighted the lights from the ships from his own world. Frantically waving his torch, he attracted their attention and they signaled in return. There were five spherical ships, which were now quite visible in the "earthlight." The largest was fully two hundred feet in diameter, while the others were but a little smaller. They traveled in an orderly formation, the largest occupying the position of honor in the center. Their formation resembled that of four soldiers conducting a military prisoner to his execution. They were propelled by

some mysterious unknown force, and were as silent as the rocks around us.

When they approached to a point above us, they stopped and the largest sphere settled slowly to the ground. Searchlights from the four spheres above were turned on us and we now heard excited shouting from each sphere.

At last the cheering came to a stop and Baklo addressed them in a loud voice. We could not understand his speech, but instead of cheers when he had finished, there was nothing but silence. Soon we heard a loud voice giving orders. A door of the lower sphere opened and Baklo conveyed the idea to us that we were to go inside. He then hurried back to the cave and closed the heavy stone doors at the entrance and joined us in the sphere. He then closed the door through which we had entered and we found ourselves alone in a single room that had no doors leading to any other part of the sphere. The only entrance or exit to our room was the glass door leading to the outside, and a glass window in the floor.

The sphere now rose to a height of several hundred feet and remained suspended in midair, in the midst of her four escorts. Powerful lights from all the spheres were trained on the entrance of the cave we had just left. Another powerful beam was directed toward the massive doors and smoke began rising from them. The stone soon became red-hot under this powerful beam. This ray of heat was then directed to the ground for hundreds of feet around the entrance, which was now heated almost to the melting point. Another more powerful beam was directed to the rocks high above the entrance, which were melted and allowed to flow down over the stone doors, hiding them completely under a mass of molten rock.

This did not meet with my approval at all, because there were several things inside that cave that I wanted and now there were no possible hopes of ever getting them. We had but two small cartons of cigarettes and three men who smoked. When our supply was exhausted, the results would be terrible.

When the work of destruction was completed, the fleet rose to a height of about three or four miles and began moving swiftly toward the west. We soon entered daylight and the speed began to increase. Looking out the windows, we saw the surface of the dead world moving along below us. Miss Brewster pointed out several familiar objects, but within a few hours, we were in a region with which she was not familiar, the side of our satellite that is never turned toward the earth. To one who knew nothing about lunar geography, no difference could be noted between the two hemispheres; but Miss Brewster was delighted with the new scenery.

The earth was now below the horizon and the sun was far in the opposite side of the sky. We had traveled almost halfway around the little world. As the sun neared the horizon, our speed was checked and the fleet came to a stop before we entered the shadow of the moon.

We soon received the strangest vision that ever met human eyes. If our ancestors before the days of Columbus could have seen it, they would have said that they had come to the edge of the world. The rocky surface came abruptly to an end. Far below, in Stygian darkness, nothing could be seen. The spheres remained suspended motionless in midair for several hours, waiting for the sun to rise high enough in the sky to illuminate the great abyss below us. The shadows shortened slowly and soon we saw something below us that looked like an ice-covered lake.

That was exactly what it proved to be, a lake that froze to a great depth during the long night and probably boiled during the long day. We were of the opinion that there was a city down there in which Baklo's people lived. Since all craters on the moon

are circular in form, Dr. Haverfield advanced the idea that this depression was circular also and was probably a thousand miles or more across. We could make no estimation of its depth, as we could now see far beyond the frozen lake, another vast abyss becoming visible under the rays of the rising sun.

The spheres slowly began to descend to the bottom and soon another plain, far below the level of the frozen lake, came into view. It was covered with evergreen trees, planted in rows like an orchard; it was very beautiful under the rays of the rising sun. At last the spheres settled above a great hole about a thousand or more feet in diameter, probably of artificial origin. The walls were marble, which was now illuminated by strange lights, making it look like a terrestrial landscape on a cloudy day. One by one, the spheres entered this tunnel and we traveled for hours before our sphere finally stopped and Baklo signaled us to get out.

BAKLO led the way through a beautiful marble passageway to a room made of the same material, fully two hundred feet square. When we entered this room, the door behind us closed of its own free will and none of our efforts could open it. We were prisoners! But for what reason?

As I recalled Miss Brewster's story of seeing Baklo marooned on the desert sea-bottom, the thought came to me that he was a professional criminal and his abandonment had been a legal punishment. When he called to them over the radio, they had probably decided to imprison him as well as his companions until they could decide what to do with them. He appeared to be highly pleased by his imprisonment; but there are a certain class of people who really enjoy being in jail. No doubt, Baklo belongs to a class similar to that. At this time, he is the only Selenite we have seen; when we see the others, they may be as much superior to him as he seems to be to us. If that is the case, what will be their opinion of us?

We were all very sleepy, but did not trust ourselves to go to sleep. It was decided to let Lacey stay awake while we slept, but he promised to call us if anything unusual developed. When Baklo saw us sleeping, he came to us with a box full of some drug resembling aspirin. Following his example we each swallowed one and the effect was marvelous. We were no longer sleepy, but felt as if we had just finished a good night of restful and natural sleep. Here was something very great indeed; why waste time sleeping when one can get refreshed in so short a time? Winters said there was a fortune in that prescription for the concentrated sleep tablets, if we could get back to earth with it. Miss Brewster said she had seen Baklo using this drug when he was struggling with his burden on the Sea of Serenity four years before.

The food served us was a prison diet if ever there was one. It consisted of water and a dry cake that was very flat and tasteless. It proved to be very nourishing, but I disliked it from the start; and now, after three months with nothing else to eat, I hate the sight of it and eat it only to keep from starving. Our cigarettes did not last very long; Lacey, Winters and I are almost ready to commit murder for a smoke. Fortunately for them, Dr. Haverfield and Miss Brewster have never smoked, and are spared the suffering of being without the soothing effect of nicotine.

Every few hours Baklo talks with some one by means of the radio, but we have no idea of what it is all about. There is a small screen attached to the radio in which we can see the face of the person to whom he is talking. It is some sort of a television apparatus, but it does not look much like the television sets of the earth. There is another device located in our prison, which we believe to be a television sending device; but of this we are not certain.

Miss Brewster is learning the Selenite language, but the rest of us are not making much progress with it. I have studied several foreign languages in school. I never mastered them, but they were easy to learn compared to this outlandish lingo of the moon. There is nothing about it that compares with any language of the earth. Miss Brewster is working as hard as she can to learn the language, but the rest of us do not have much of a chance, as she monopolizes all the instruction.

To pass away the time, I have written this brief account of our voyage; but it is doubtful if it will ever be read. These Selenites can not read it, and it is doubtful if they will let us return to the earth with it. It is now complete, up to date, and I must wait for something else to happen before I can write any more. We have lost all reckoning of time. There is no day and no night here; everything is always illuminated by that strange light, whose origin we can not find. There are no light bulbs, no flames, no visible source of light, but the entire room is as light as the great out doors of earth on a cloudy day. Dr. Haverfield says the lighting system is perfect. It probably does seem so to one who is not suffering for a puff of smoke from a Camel.

Adjoining our large room are several smaller rooms which seem to have been cut out of the solid marble. These are used as our private rooms. Another room in which there is running water, we use for a lavatory. But in the ceiling of the large room (or Bull-Pen, as I call it) there is an outlet. In the exact center of this outlet, there is a small luminous object that is continually sending off small sparks. I believe that, if I can get past it and follow this passageway to its end, it will lead out of this accursed place. I have reached the point where I am willing to risk anything to get out. Our last safety-razor blade was discarded three weeks ago and we men from the earth are running around here with beards that are a disgrace to civilization.

Miss Brewster is the only one of our original party who is perfectly contented. She and Baklo are together continually and they enjoy the company of each other very much. He tells her that marriage is not the same kind of an institution that it is back home; and certain difficulties must be overcome before they can ever marry.

PART THREE

The Narrative of Dr. Wm. H. Haverfield, A.M. Ph.D., President Emeritus of Belmont University.

CHAPTER I

SOME time after the injury of Davis, Miss Brewster explained that she and Baklo were making a Selenite-English dictionary, for the purpose of better mutual understanding. Her task was a difficult thing to do, inasmuch as the two languages have nothing in common.

Miss Brewster would speak an English word and, by means of gestures, explain its meaning to Baklo, who would give her the Selenite word for the same thing. She would then write the word and spell the Lunar equivalent in English characters. Baklo would then write the same word in his own language, and spell the English word in Lunar characters. They spent their entire time at this task during the period of our imprisonment, or as I should say, the period of our quarantine.

To keep up our morale during our quarantine, we often sang; among our favorites was "Over the Hills Comes the Sunrise." We had a lot of fun teaching Baklo to sing it in English. And in spite of his difficulty with a certain high note, he never seemed to tire of it. While the two were working on the dictionary, when either showed signs of tiring, this song re-

vived them and made their work a pleasure.

As soon as they could understand each other enough to carry on a conversation, Baklo explained the purpose of our confinement. In the remote past, the Selenites had made voyages to the earth and discovered in our atmosphere as well as everything on our planet a strange form of life—bacteria—disease germs of countless varieties. By sad experience, they had learned the effect of these organisms on the human body and were determined to keep them out of the Selenite world, which was entirely free from all kinds of disease. When news of our arrival reached them, they feared that we had brought with us all manner of loathsome diseases. The spheres, which had been sent to rescue us, were ordered to close up the entrance of the cave in Mt. Despair, and use a heat ray to destroy any bacteria that might be present in the vicinity.

In order to keep us isolated from the Selenite population, we had been brought to our present quarters in a separate cell of this sphere. The machine that had been the undoing of George Davis was a sort of death-ray, designed for the purpose of applying heat to all forms of life that came within a certain radius, and thus destroying them. It was situated inside the outlet of the ventilator, for the purpose of killing any microscopic organisms that might escape from our bodies, as they left the room with the foul air. The air that we breathed did not enter the room through a ventilator of the terrestrial kind; but was manufactured from a liquid by another peculiar machine within the room. An odorless chemical which acted as a disinfectant was mixed with the air; as we breathed this preparation, our bodies were cleansed of all disease germs. This process could not be completed within a few hours, nor a few weeks. In fact, about twenty lunar days, or nineteen terrestrial months, passed before we were permitted to leave our quarters. By this time Dorothy and Baklo could converse quite freely, and the rest of us had a working knowledge of the Selenite language.

Every move we made during this time was observed by scientists studying us by means of radio and television. Lunar microphones picked up every sound we uttered; and we were surprised to learn, upon our release, that certain Selenites could use our language almost as well as we could use theirs.

Our clothing had been replaced as fast as it was worn out, by new garments of the same color and pattern, although the material was not the same. We learned later that it is made from some synthetic fibre, of which they have several varieties, ranging from a silky cloth, fine as a spider's web, to a coarse canvas, too tough to cut with an ordinary knife. Their own garments are somewhat similar to our own, but no time will be taken in describing them, because no two Selenites dress exactly alike. Several volumes could be filled with descriptions of their styles and manner of dress and still there would be enough left over to keep the designers of New York and Paris busy imitating them for years to come. On the earth, it is seldom that one sees two women dressed exactly alike. On the moon, the men are just as fastidious; and the Selenite women are even more so.

BAKLO explained that we would be expected to undergo a surgical operation as soon as we were removed from our quarters. He said that all of our bodily organs would be completely overhauled, certain detrimental glands removed and foreign growths substituted; which would prevent aging and wearing out of the tissues, and keep our bodies in a youthful condition. As a result of these operations at certain intervals, as well as from correct diet and the absence of detrimental microbes, the life of the Selenites is from 900 to

1400 years, unless they meet with accidents.

I shall not describe this operation, because I know nothing about it. We were unconscious while it happened, and were kept in a state of suspended animation for a period of three lunar days afterward, while we were recovering from the effects of it. When we were permitted to come to our senses, we felt entirely well in every way. Though I am but fifty-six years of age, I was considered old when we left the earth; but, after this operation, I looked and felt like a youth of eighteen or twenty. My gray hair had disappeared and a new crop of blond hair, such as I had in my youth, was growing on my head, including the spot that had been bald for over twenty years. Our beards had disappeared and our faces were as smooth as that of any woman. Since this operation, it has not been necessary to shave.

We had found the mythical "Fountain of Youth," for which mankind has longed for centuries. I can not describe my emotions, when I came to my senses and found myself again young in body and still old in experience. I had reached the point in life where I considered myself almost no longer useful. I now thought I was better equipped to do things than any of my fellow earthlings. How I longed to return to Belmont and take up my duties where I had left off! I would be the envy of all my old colleagues, who were facing the day when their age would disqualify them for further usefulness.

I could see a distinct change in my personality. I had taken pride in the dignity of age. I was now a young man with the prospects of a long and promising career before me. In my new life, I would be able to foresee many mistakes and dangers that had caused me considerable trouble in the past, and I could scarcely wait to get back home and begin my life anew. Thoughts and dreams of my youth, that had long been abandoned, returned to my mind. Mischief and boyish pranks were trying to gain supremacy over my habits of age and dignity; but my former experience told me which emotions should be suppressed, and which should be cultivated.

It was our desire to travel and explore the many mysteries which were evidently to be found on this little world. When I explained this wish to Baklo, he told me that plans had already been discussed, and probably adopted, for our entertainment and education to qualify us for citizenship.

"But we do not care to qualify for citizenship; we have no intentions of spending our lives here. We want to return to the earth, just as soon as we have seen the wonders of your world," I replied.

"How do you intend to make the return voyage?" he asked.

"In the *Astronaut*, the rocket in which we came. With the aid of your mechanics, it can be reconditioned for the return trip."

"Your *Astronaut* is completely destroyed. Everything you brought with you, with the exception of those supplies which we carried into the cave at Mt. Despair, was destroyed by our heat rays. It was decided to take no chances of your bringing disease to our world."

"But you can help us to construct another rocket," I replied.

"Yes, we could do that, or we could give you one of our own space flyers; but we have no intention of doing anything of the kind."

"Why not?"

"That will be explained to you in due time; probably before the day passes. An interview with our Zerko and the Buzerks is being arranged for you."

"What is a Zerko and a Buzerk?"

"A Zerko is the supreme ruler of our world. A Buzerk is elected by a smaller group of 100,000 citizens as

their sub-ruler. The Buzerks are also advisers and assistants to the Zerko. They meet with him when he calls them, and together they make plans and laws for the welfare of the citizens. Each Buzerk has a number of assistants who see that the laws are obeyed in his community," he explained.

"Why are we to meet with your Zerko and Buzerks? What do they want with us?"

"That is for them to tell you. Zerko Tarkomas has commanded his Buzerks to meet in the council chamber; and we will go there to meet them just as soon as their preliminary conference is ended."

"What sort of a person is Zerko Tarkomas?"

BAKLO smiled as he answered: "Zerko Tarkomas has been our ruler for almost five hundred years. If he lives ten years longer, according to our ancient laws, he must abdicate the throne to his lawful successor. No Zerko can reign for more than five hundred years.

"Tarkomas is loved by all his people, and it is with regret that they see his reign draw to a close. But it may surprise you to learn that Zerko Tarkomas is my father and I am heir to the throne.

"Medo, my uncle, had visions of acquiring the throne. I stood in his way; so he planned to have me kidnaped and killed. He used his influence to release a number of criminals, who promised to assist him in his plans. As a result, I was kidnaped and marooned in the desert, which you call the Sea of Serenity. Dorothy saw them leave me with a small amount of provisions, to prolong my suffering, before I should die from exposure to the hostile forces of Nature. I determined to use every ounce of power I possessed to defeat Medo's plans and bring him to justice. Dorothy saw me struggle across the desert to the cave in Mount Despair, and you know the lengthy story of my rescue.

"After our return and the story of Medo's crime was made known, he was punished. It was solely through the efforts of his brother, Zerko Tarkomas, that he was not put to death. The reign of Tarkomas has been entirely free from this sort of punishment; so it was decided to place him in solitary confinement until I succeed my father on the throne, when it shall be my duty and privilege to pronounce sentence. It had been my intention to deal severely with him; but Dorothy has convinced me that no pleasure can come to me through his suffering.

"Although he did not know it at the time, Medo has done me a great favor. As soon as I was given up for dead, he married my wife; this makes me free to select a wife of my own choice. The Supreme Council has the power to select the wife of the heir to the throne, in order to keep our finest blood in the royal family; but they are entitled to dictate only one choice. Her marriage to Medo makes me free; but the Supreme Council must approve the second marriage. As you no doubt suspect, Miss Dorothy Brewster is my choice; but the Supreme Council does not favor a women of an inferior race as the Queen of Dunel. It remains to be seen what the result will be."

"Who said Dorothy Brewster was of an inferior race?" I asked in indignation.

"That fact can not be denied. Our race has been civilized for over a hundred thousand years; but your own can not boast of a written language in your entire world that is more than five thousand years old."

"Does that imply that we are of an inferior race?"

"Intellectually, it certainly does. Physically, there is a question; our powers of endurance are greater than yours, but your muscular power is greater than ours. But for that mat-

ter, we have animals that have more powerful muscles than ourselves; except in sport, muscular power does not mean much on Dunel."

* * *

It was some time later that Dorothy came to me with the message that our entire party was commanded to appear before the King of Dunel within a period of four diros. We were to assemble at our former prison and be conducted to the Council Chambers.

At the appointed time and place we were met by Baklo, who informed us that he was to conduct us to the Council Chambers. He and Dorothy led the way through a long passageway for almost half a mile, after which we entered an elevator and rose to another level, about a thousand feet higher. After a short wait, there arrived a car which resembled a small street car, although it was suspended from a single overhead track. This car, we later learned, is the equivalent of our own passenger trains, used only for long-distance travel. But on this occasion, since there was royalty in our party, we were the only passengers.

After traveling for about three hours through an illuminated tunnel, the car came to a stop. Then we entered another tunnel and descended to a much lower level. After a short walk through beautiful passageways, we entered a small anteroom and were directed to sit down on a marble bench, carved from the solid marble wall, and wait until we were asked to enter the royal presence of the king.

CHAPTER II

THE Council Chamber was a large, palatial room, almost circular in shape, about 150 feet in diameter. It had the appearance of being carved out of a solid block of marble. In the center of the room was an enclosure about twenty feet in diameter, with a marble railing around it; within this was a large marble table, around which a small group of men were seated. At the head of the table was a man with a purple robe about his shoulders. There was about him an invisible something that gave him the appearance of being very old and at the same time despite his white hair quite young. He was the very personification of dignity and power; his features reminded me of a marble statue of a Roman emperor I had once seen. This was Zerko Tarkomas, the King of the Moon and the father of Baklo, who now took his seat at the right of his king.

The other men at the table were his most intimate advisers, or as we might say, the Cabinet. Outside the central enclosure, in circular rows of seats, were the Buzerks, men who were now acting as a parliament or congress; though, outside of the Council Chambers, their office was comparable to that of a governor or mayor, for each was a ruler over a community of approximately 100,000 citizens. The seats at the end of the table in the center were reserved for us. I was directed to the middle seat, with Miss Brewster at my right and Lacey and Winters at my left.

Baklo was the first to speak. As he rose to his feet, cheers and applause sounded throughout the hall. This was his first appearance in the Council Chamber since his abduction almost six years before. When the cheers finally ended, he made a short address; which I shall not attempt to repeat because I did not understand half he said. As his speech came to a close, he asked each of us to rise to our feet and be introduced to the Supreme Council. Loud applause greeted each of us as we were introduced; but as Miss Brewster rose to her feet, the cheers and applause became a deafening roar. This was her first public appearance before the Selenites, and the enthusiasm with which she was greeted will be remembered

as one of the outstanding events of my life—even if I live to be a thousand years old.

When the applause finally ended, Baklo spoke to us in English. He first introduced his father Zerko Tarkomas, the ruler of the entire moon. The cabinet was then introduced separately; but, since there was one thousand Buzerks assembled, they were introduced *en masse*. Baklo then explained that the purpose of the meeting was to give Zerko Tarkomas an opportunity to interview the guests who had entered his world. This was the first time in Lunar history that visitors from another planet had thrust themselves upon this peaceful world; and it was only natural that we should be interviewed by the Zerko, in the presence of the Supreme Council.

The interview was rather difficult, as neither the Zerko nor his visitors could speak each other's language. Dorothy and Baklo acted as interpreters and neither was completely master of the language of the other. At times, it was necessary for them to hold a private consultation of their own before a sentence could be correctly interpreted. This interview was rather lengthy; when Lacey and Winters read it, they will say that I have hit only on the high places.

"My son tells me that you have come from our neighbor world, which we call Barlenkoz. Why did you come here?" This was the first question from Zerko Tarkomas.

"We came to test our invention, the astronautical rocket, and to search for knowledge regarding our satellite. Miss Dorothy Brewster had learned that your world had an atmosphere and was capable of supporting life; but we others did not know until our arrival that there was a race of human beings here. Miss Brewster proposed and financed the expedition for the primary purpose of rescuing your son, whom she had seen marooned on the desert; but we never knew or suspected this until Baklo was introduced to us."

"You say you come to search for knowledge regarding your 'satellite.' What is a 'satellite'?"

Dorothy and Baklo, after a consultation of their own, supplied the definition, which did not seem to meet with the approval of the Supreme Council.

"Is it your custom to regard our world as a small body, with no other excuse for its existence than to run in little circles around your big Barlenkoz?"

"No scientific theories have ever been formulated concerning the purpose of the existence of your world; the only purpose it has ever served for us is to furnish reflected light to our world at night. Our scientists believed your world incapable of supporting life until Miss Brewster made the discovery."

Without knowing it, I had insulted the moon, its king and all of his subjects. I should have known that any intelligent man is patriotic enough to love his country and his own world; this unintentional insult at the beginning of our interview was a very thoughtless procedure.

"I feel that it is my duty to inform you that our world does not run in circles around yours; the two revolve around their common center of gravity. Since Barlenkoz has stolen our oceans, and even our original atmosphere, it is doubtful if your race could endure on our world for even one dirdir! They could not endure for one isdir, if it were not for the protection given by the superior intellect of a greater race!"

Zerko Tarkomas was making an attempt to control his rage; but the insult had been too great.

"I am sorry I did not give your world the respect to which it is entitled. But our people are very ignorant as to conditions here; I merely gave you the popular terrestrial conception of Dunel. I am indeed sorry and offer you my apologies."

"WE will forgive you, but please remember that we love our little world and our people feel a deep and deserved hatred toward Barlenkoz. Let us proceed: Do your friends know that you arrived here in safety? Have you communicated with them?"

"Unless our arrival was observed from the Brewster Observatory, where the only telescope of sufficient size is located, they know nothing of our arrival. Our radio is useless at that distance, hence communication is impossible."

"If it were known that your voyage was made in safety, would others follow?"

"I believe they would."

"For what purpose?"

"Exploration and adventure, to search for rare minerals and probably to make their homes here."

"What do you mean by adventure? Would they make war upon us?"

"No war will be made without cause. Our government never makes war until forced to do so."

Tarkomas spoke a few words to an attendant in his own language. The attendant left the room and soon returned with a globe of our earth, done in bas-relief, showing all the physical characteristics of our planet but, of course, no political boundaries.

"Show us where your country is located," he asked.

I showed him the portion occupied by the United States of America.

The king gave an order, and the attendant carried the globe around the room, giving each Buzerk a chance to see the country designated. Some shook their heads in doubt, while others cast evil looks at us.

"We can not believe you," Tarkomas said when the examination of the globe was complete. "Our latest exploration of your planet showed your race to be living here,"—pointing to the northern half of Europe: "The men who lived where you designated were of a reddish brown color."

"When did you last explore our planet?"

"Our last exploration was made during the ninth year of my reign, that makes it 481 years ago. I led the expedition in person, as that is one of the first duties of a new Zerko."

"Many things have happened on our world since you last explored it. The wild red men no longer inhabit the smaller hemisphere. The white race has made wonderful progress and showed their supremacy in every part of our globe. If you were to explore our planet today, you would not recognize it."

"What has become of the red men?"

"Most of them were killed in the wars with our ancestors, who made colonies and settlements in the newly-discovered continent. The red men attempted to drive them out of the country but, in the wars that followed, their power was broken."

"Do you call that progress?"

"They were a barbaric, decadent race and we have developed the country to an extent they could never reach."

"Did that justify your killing them off?"

"They would not be peaceful; it was our lives or theirs and our fathers simply applied the law of self-preservation, the survival of the fittest. Our safety depended upon their destruction."

"And you told me that you never made war without cause! The mere fact that you wanted to make colonies in a foreign land and take possession of it seems with you to justify war. If you wanted our world, you would do the same thing here. You said that the safety of your fathers depended upon the destruction of the red men. Our safety depends upon keeping your hordes of people from trying to invade and colonize Dunel. Our first step shall be to prevent your party from ever returning to tell your people that ours is a desirable land that can be reached in safety. You are a barbaric race yourselves; war and wholesale murder have been the most

prominent things we have witnessed on your planet, each time we have explored it in the past. Applying your process of thinking, what did you call it? Er-er—'the survival of the fittest,' that's it; applying that system our safety depends upon your destruction. If we decide that it does, we have the tools necessary to accomplish it within a very short time. But you spoke of progress. Tell us what progress you have made during the past five hundred years."

I described the early voyages and explorations of that period, together with the inventions that marked the beginning of the modern era. I told of our recent inventions, development and progress. I described our railways, oceanic commerce, aviation, as well as the recent inventions and scientific discoveries such as the X-ray, radio, television and everything I could think of to show him that we were not an entirely warlike people, but an intelligent and progressive race. When I had finished, a titter of suppressed mirth was noticeable over the entire room, which finally burst out into loud laughter.

This annoyed me; but, at a gesture from the Zerko, the mirth of the Buzerks was suppressed. Turning to us, Tarkomas apologized for their conduct:

"My people evidently think your present condition is very crude, compared to our own. But they will not laugh so loud when I ask them if we have done as much during the same period. Comparing the conditions you have just described with those I observed less than five hundred years ago, I will say that no group of human beings, at any time during the last quarter million years, have done as much in so short a period of time. On behalf of my people, I congratulate you and express the hope that your progress continues unchecked."

There being no other questions to ask, Zerko Tarkomas continued: "You will now be conducted to the room that you have occupied since your arrival, and wait until we send for you. You will then know our decision, regarding your future. Have you any request to make before leaving the council chamber?"

"My only request is that we be permitted to return to the Earth when we desire it."

"Have the other members of your party anything to ask?"

"Yes," Lacey replied, "I'd like permission to return to the cave in Mount Despair and get some of the articles we left there."

"Do not build your hopes too high. I have no idea that either request will be granted." He then spoke to an attendant, who conducted us out of the room and the interview was ended.

After a period of one dirumo (2¾ terrestrial days) we were again conducted to the council chamber to learn our fate. We found everything as we had left it and were shown every courtesy as we entered the room and took our seats.

"Friends from Barlenkoz," Zerko Tarkomas began, "we have reached a decision as to what disposition to make of you. This is the first time in our history that anyone from Barlenkoz has ever been admitted to our world, and it has been decided that this shall also be the last. We realize that this is both selfish and discourteous; but we can not sacrifice our world or our race for the benefit of an inferior race of men. Hereafter, should any of your people come to Dunel, they will be destroyed without asking any questions, as soon as we are aware of their presence. If we were to permit a peaceful settlement of Barlenkozians at any point on our world, they would increase in numbers so rapidly that Dunel would soon be overrun with foreigners, and there would be no place for our own people. We will use every means at our disposal to prevent an invasion, be it peaceful or warlike, of germ-infested Barlenkozians.

"You are of a warlike race. Even

though your own nation is peaceful at present, it is composed of the same blood as the other nations of your world. We are not convinced that you would never make war with us; a war between Dunel and any part of Barlenkoz is undesirable to us. We have no desire to wipe any race out of existence but, if we were invaded by hordes of foreigners, we would have no other choice. Our own safety would depend upon it.

"In your own case, circumstances are different. I owe you a great personal debt for restoring my only son to me, after he had been given up as lost. The people of Dunel are grateful because you have restored the heir to the throne. You have earned our gratitude; and you shall be rewarded with life and citizenship. Every effort will be made to extend the period of your lives to an equal of our own. We can not place you in the regular classes with our own young men and women; because we do not know just how to grade you nor where to place you. Your knowledge of our language is inadequate, and it would be unfair to you. We have decided to give you private instruction until you are qualified to take your places in society as useful and honored citizens; provided of course that your mentality is capable of absorbing our instructions. You will presently be introduced to your instructors, in whose charge you will remain until your education is complete, or until your maximum capacity for learning has been reached, as the case may be. This will undoubtedly cover a period of thirty-five years, or even longer."

"Wouldn't that arouse your indignation?" Lacey whispered to me.

"I have another painful duty to perform at this time," the Zerko continued. "I have a message for Dorothy Brewster. My son has asked for permission to make her his lawful wife. His request has been denied by the Supreme Council. If he were destined to be a private citizen, the decision might have been different; but the time is almost at hand when, according to our ancient law, my crown shall be placed on his head. He shall then belong to the citizens of Dunel and shall rule this world for a period of five hundred years, if he lives so long, after which the throne shall pass to his son. The Supreme Council thinks it unwise to mix foreign blood of an inferior race with that of the reigning family. In spite of the debt we owe to Dorothy Brewster, the marriage must never take place. Baklo will have no time in the future to spend with you. He must remain with me, and continue his preparation for the high honor and great duty that shall be his within a few years."

"Yes, Lacey, my indignation is indeed aroused!" I whispered to Lacey, in reply to the question he had previously whispered to me.

"YOUR instructors are here," continued the Zerko, "two men, Musgal and Sodop, and one woman, Tirzol. Tirzol shall supervise the instruction of Dorothy Brewster, while you men will be in charge of Musgal and Sodop. We hope you will find both pleasure and profit in their company. You have been under their observation during the period of your quarantine. Since they know something of your language and customs, we think they are best qualified to teach you. You will now leave the council chamber with them and remain in their company, doing as they tell you until your education has reached its maximum. But banish any thoughts you may have of ever returning to Barlenkoz.

"Before you go, Baklo has a few things he wishes to tell you in private; this will probably be the last opportunity you will ever have to talk with the future Zerko of Dunel."

Baklo had but little to say to us three men. He assured us that the decision was made against his own personal wishes; but to safeguard the interests of the citizens was the para-

mount duty of the Supreme Council. He expressed his regret that we must part, but this duty demanded it. He promised to do all in his power for us, provided it did not interfere with his duties to his people. He then took Dorothy aside and asked us to excuse them.

For two hours they were together. I do not know just what was said or promised. I am not writing a love story, and I would not tell, even if I did know. But when they parted, both were in tears which they made a vain effort to conceal. We had hoped that marriage was to be the reward of this splendid couple, but it now looked hopeless. Lacey and Winters expressed their sympathy; I don't know whether I wanted more to cry or to fight. I was so indignant at the Supreme Council for describing us as their inferiors, that it was the height of my ambition to tell them myself a few things about superior races and superior intellects. As George Davis would have said it, I felt like a bulldog wearing a muzzle among a pack of wolves.

CHAPTER III

THEIR knowledge of history covers a period equal to almost a *half a million of our years.* It begins on a planet, located about 260,000,000 miles from the sun, which in those days was somewhat larger than it is today, and gave off more light and heat. This planet, which they knew by the name of Tiverpo, was the oldest in the solar system, or rather it was the first to acquire conditions favorable to plant and animal life. Many forms of life had their genesis on Tiverpo, and a few of them still survive. Chief among these is the human race itself.

The records of the earliest human beings are clouded in obscurity. They were too unintelligent to record anything, even in the form of pictures on the rocks; but as time passed the race developed an intelligence. I have neither the time nor space in this manuscript to describe the first early people. I shall pass over a period of several thousand of their years (each *four and one-half times* as long as our own year), and tell of the two outstanding races that eventually developed.*

In the torrid zone of Tiverpo, there lay a great continent called Vudu. The inhabitants of this country developed an intelligence thousands of years before the other branch of humanity; which occupied a more temperate continent, known as Kroy. The Vuduites, from constant exposure of their bodies to the rays of the sun, were dark-skinned, while the Krojans, who lived in caves and clothed themselves with the skins of animals, were of a fair complexion. The Vuduites, during an indefinite period of time, built up a civilization which e v e n t u a l l y reached a high standard. Wars waged against the Krojans, who never organized against their enemies, were more of the nature of a hunt for wild beasts. The Krojans never fought until cornered, and the Vuduites found it easier to take them prisoners and offer them as sacrifices, to their black deities, than to draw them into battle. After a time it was learned that the Krojans could be taught to do menial tasks; which they preferred to do, rather than be sacrificed to a black god in a painful and cruel manner. It is doubtful if this profited the white race very much; they proved such valuable slaves that the Vuduites began a systematic search for more slaves.

AS a result, the entire race of Krojans were enslaved by their black neighbors. Their association with the superior race civilized them to some extent; at last, they learned

*It is not established among the Selenite scientists, that the origin of the human race took place on Tiverpo. Many things indicate that humanity came from some planet outside the solar system; but, since all early records were destroyed, that will always remain an unsolved problem.—W. H. H.

to become dissatisfied with their condition and rebelled. The rebellion was soon ended by a victory for the blacks. For a period of over two thousand Tiverpian years, the history is nothing but a series of unsuccessful rebellions on the part of the slaves; and a series of the most frightful and cruel punishments administered by their black masters, who recognized the fact that their slaves were fast becoming their equals in intelligence.

During the same period, the blacks made a tremendous improvement in their sciences and manner of living.

At last the sun god became angry or something else happened that has never been given a scientific explanation. A change came over the climate of Tivero. The sun did not give quite as much heat as formerly, or the condition may have been caused by the atmosphere of their planet; but, as a result, the part of Tiverpo on which they lived cooled and the regions which had been merely temperate became too cold for comfort. The blacks' scientists could not understand the cause, though they conducted all sorts of elaborate researches. But they did find the remedy. They made a change in the composition of the atmosphere of their planet, and relieved the situation.

Through their knowledge of the atomic structure of matter and their experience in transmutation of the elements, they had learned to change solids to liquids of an entirely different atomic structure and nature. A strange liquid, made from solid rock, was in turn transmuted into a gas, unlike any other known at that time. This gas was similar in some properties to our oxygen and was entirely invisible. It was impossible to make a great amount of hydrogen unite with it. In fact it repelled hydrogen. Water vapor could not endure in the new atmosphere for a very long time; consequently there was but little evaporation, few clouds and almost no rainfall. The waters of the sea remained without evaporation. The land became a desert and a system of canals for irrigation became necessary in order to support life. But the desired changes were brought about; the air became clear and almost invisible, permitting the rays of the sun to pass through much easier and warm the planet that was getting too cool for comfort.

The white race was now almost the equal of their black masters in intelligence. They knew how to operate and use all the machinery in their world, but they were not permitted to become educated beyond that point. Their masters were determined to keep them in ignorance and subjugation; and only by secret methods did the slaves learn the secrets that were denied them.

Centuries later, the planet became overcrowded. There was no longer room for the large, increasing population. The blacks would not consider limiting the numbers of their offspring; and the white race was too valuable as slaves to limit their numbers. Science was able to supply one solution; other worlds must be used for a dwelling place for their multitudes.

Scouting expeditions were sent out in gravity-control space-flyers. On Mars they found a strange but intelligent form of life which was able to thwart the plans of the invaders. Venus was inhabited by unintelligent forms of life; but it was not adapted to human habitation, because of its unusually large atmosphere and water. The larger planets, outside the orbit of Tiverpo, were too large (their force of gravity was so strong that it was impossible for a human being to rise to his feet) and cold. *The Earth was not then a member of the solar system.*

But Dunel, the smallest and most mountainous of all the planets, met their requirements. The most intelligent natives of this world were those creatures with the wide feet, "The Flat-Footed Selenites." Only a few of these, which have been described by

Miss Brewster, are now in existence. Like the American bison, they are facing extinction.

THE Vuduite explorers found Dunel very mountainous, but there was an abundance of air and water. The massive foliage of the plant life made much work necessary before it could be made into a satisfactory home for the human race. A large colony of white slaves, with merely enough blacks to keep them in subjugation, was brought to the little world. In time, other colonies arrived and Dunel was soon populated. The new world was much smaller than the old; the settlers found themselves very light in comparison to their former weight.

During a period of two hundred years, the civilization of the old world was brought to the new. Most of the inhabitants were now slaves, with only enough masters to supervise the work. The majority of the pleasure-loving and somewhat lazy blacks remained at home, where the comforts and pleasures of life were more abundant. Their scientists were still making progress in learning the secrets of nature and using her mighty forces. But the power within the atom continued to baffle them; many were inclined to consider it unavailable, but others continued to struggle with their apparatus in an effort to be the first to release and utilize this tremendous power.

While the effort to develop atomic power was at its height, a certain space-flyer left Tiverpo with a cargo of provisions and more white slaves, bound for Dunel. They were many million miles from the old planet, when they witnessed the sudden destruction of Tiverpo! Motion pictures were common in those days and a camera was busy taking scenes of the planet at a distance, when the world seemed to fly to pieces. (Those pictures are still preserved, and our party had the opportunity to see the planet explode.) A flash of light and a cloud of smoke that rapidly spread throughout all space was all there was to it. Nothing remained but particles of atomic dust, cloudlike in appearance, which rapidly scattered throughout millions of miles of space in all directions. A last cloud which had continued to follow the orbit of the lost planet around the sun, began to disperse as the particles of atomic dust began to collect into small miniature worlds known to terrestrial scientists as asteroids. Thousands of these still exist to this day, while another part thrown off at a tangent was captured millions of miles away by other planets.

It is believed that a scientist of Tiverpo had succeeded in liberating the power of the atom, and found it uncontrollable. The atom whose power had been liberated released the power of the atom nearest it; which in turn released the power of others in the vicinity. Each atom exploded the atom nearest to it and like a spark in a keg of powder, the entire planet exploded. Of course no one lived to tell the story, but the accepted theory, and probably the true one, is that given above.

The only remnant of humanity was now on the smallest planet in the entire solar system which, from its small size, could not support very many inhabitants. The Krojans now realized that they outnumbered their cruel masters more than ten to one. They made a desperate effort to regain their freedom; but the Vuduites had taken such precautions that what promised to be a great insurrection ended only in a massacre of many of the slaves. Realizing that their ancient supremacy was now in danger, the blacks did all in their power to curb the growing power and numbers of their slaves. They attempted to destroy white children as fast as they were born, and perform on the adults surgical operations making them permanently sterile. But the whites, in order to escape these outrages, adopted new tactics. As individuals they succeeded in doing that which they had failed to do working together. Acting as a

whole, they had never had an organization nor a leader capable of uniting them successfully. Acting separately, it was a case of each man for himself; thousands perished, but enough escaped, one at a time, to defeat the plans of the blacks. The slaves continued to watch their opportunity to escape and hide in the mountains. When the heavy iron shackles had been removed from their bodies, they were more than the equals of their former masters. In a short time communities were formed in the mountains, composed entirely of escaped slaves and their children.

CHAPTER IV

AFTER the destruction of Tiverpo, the black race attempted to continue their old methods of measuring time; but those whites, who had escaped and founded communities of their own, adopted another method, basing the year on Dunel's motion around the sun, making it slightly more than fifteen terrestrial months. Little is known of the activities of the Vuduites during their next two thousand years. The white tribes soon became nations, of which there were no less than fifty. They still continued to speak a form of the ancient Vudu language; but had no dealings with their former masters and no news from them other than the stories of escaped slaves, who continued to arrive and make their homes with the whites.

Wars were common among the many nations, as they found their numbers increasing and their territory becoming over-crowded. Many wars were waged against the Vuduites; but that race had long ago located their cities and strongholds in strategic places—the wide craters of extinct volcanoes, the high rims of which were fortified to such an extent that they easily repulsed the attacks of the white invaders. Several of these strongholds fell under the continued attacks of the whites, who were aided on the inside by their friends still in bondage. But they never succeeded in their two great ambitions: to wipe the Vuduites out of existence and to obtain the secret of the control of gravity.

During the two thousand years on the new world, the human race had perfectly adjusted itself to the new conditions. On Tiverpo, the force of gravity was about four-fifths of that of the earth, as near as I could make an estimate. On Dunel it is only one-sixth. Coming from Tiverpo to Dunel, they found their unusual lightness very annoying as they attempted to duplicate the activities of the old world. But their lightness called for less physical exertion. Among the blacks, who had slaves to do all their menial tasks, laziness and obesity became a racial trait. The whites, who were encouraged by the amount of work that could be done wth a minimum of exertion, continued with renewed efforts. They soon learned to look upon their lightness as a very natural and commonplace condition. After seventy generations an unnoticed physical weakness, which eventually offset their lightness, was the natural result.

FOR several decades, astronomers had been viewing with alarm a new menace in the northern skies, which caused both races to forget their wars and worries over too large a population. A new star had appeared, which was first thought to be a comet; but as its brightness increased, it was discovered to be neither comet nor nova, but a huge sun almost as large as their own, approaching the solar system at an appalling rate of speed! Terror seized the population of both races when it was announced that the stranger from outer space would pass through the solar system and probably collide with their sun or some of his planets. It was calculated that the two suns would draw each other out of their respective paths and collide with each other.

Speculation was rife as to the outcome of the collision; it was feared that the two suns would unite and from the explosion of this great combined mass all the planets would be extinguished.

Years of terror and suspense followed, as the alien sun continued his terrifying journey toward Dunel and her sister worlds. Fear of annihilation caused the people to forget their culture and an unprecedented crime wave followed. Some of the white nations again adopted the Vudu religion, in an attempt to persuade the black sun-god to come to their aid and save them from destruction. Vudu rites among the blacks became an outrage to anything that could be called a religion. Over half of the slaves and many of their own women and children were sacrificed to the cruel deity; but the menace in the skies continued to increase in size as the two suns and their families of planets grew nearer to each other.

At this crisis, there rose one of the greatest characters in human history; a man who is now regarded on Dunel as the savior of their race. His pictures and statues, which remind one of Zeus, the king of the Olympian gods, still adorn every public place in that little world. For a long time he was worshiped as a demigod, and his name is still revered above all others. In time his name has become a synonym for authority, wisdom and royalty—it is Zerko.

Zerko had been educated for the priestcraft of the nature-worshiping white nations. He had just started his career when the menace in the skies terrorized the world. From the start he showed his supremacy by maintaining his equanimity and never becoming excited nor terrified as he calmly made an exhaustive study of the alien sun and his family of planets. He was the first to discover that the two suns would not collide. He learned that the alien sun would cross the solar system at a point outside the orbit of Jupiter, who would at that time be on the opposite side of the sun.

When he announced his discovery, other astronomers checked up on his findings and confirmed them, after which the people breathed easier and conditions were almost restored to normal. But Zerko soon saw that he had overlooked dangers. Now that the suns were out of danger, what about their families of planets?

He found that Dunel and Venus would be between the two suns. Uranus and Neptune would be nearer the alien sun than their own, but probably still far enough away to be out of danger. Mars and Jupiter would be on the opposite side of their own sun in a zone of safety. A solar being would have seen Saturn at right angles to the invader, over a billion miles from it.

The size and position of the alien family of planets was harder to determine. He found that two of them must pass dangerously close to our sun; another would come within a million miles of Jupiter; while the orbit of another planet would cross the orbit of Dunel. This alien planet was about fifty times the size of Dunel and would be much nearer our sun than her own mother sun. But the most terrifying thing of all was the fact that the menacing planet and Dunel would both want to occupy the same position at the same time! A head-on collision was inevitable!

CHAPTER V

ZERKO was not the man to sit idly by; yet he realized his inability to avert the calamity that threatened the destruction of his world and the annihilation of his race. Like all men in trouble, he wanted someone with whom he could discuss the matter, so he called a conference of the ablest scientific men available. As he showed them his charts and calculations and explained everything to them, they agreed with him that a collision of the two planets was inevitable, and less than a year remained in which to prepare for the end of the little world.

Zerko was baffled. Under the strain that followed, his assistants deserted him and the reign of terror began anew. Under the circumstances, most men would have given up in despair; but Zerko proved that he was no ordinary man. He never lost hope, even during the most trying times, and never abandoned his untiring efforts to find a means of saving his race from extinction.

Zerko remained faithful to his task, trying to pierce the depths of the secrets of nature, grasping every straw of hope for a doomed race. The course of the two planets through space was mapped again and again; the gravitational influence of nearby planets was carefully calculated and checked, but the result was always the same. The crash was certain; enough heat would be generated to annihilate his little world and his people could not escape it.

He began to speculate as to what would happen when the crash came. He saw that both solar systems would be in a state of chaos, every planet would be influenced by the gravity of all the others; and no man could foresee just what would happen. Perhaps the motions of the planets in their orbits, as they followed their respective suns, and unexpected gravitational influences, would cause either Dunel or the Menace ("Barlenkoz") to be thrown out of its course to such an extent that a collision would be avoided and his race would be saved. He never abandoned this idea; if his reasoning were correct, the safest place available would be the interior of his own little world, where he knew that large caverns already existed. To these places, he determined to take his people, believing there was some hope of saving his race.

Our own terrestrial scientists have long noted that the specific gravity of the moon is much less than that of the earth, causing them to think the two bodies are composed of different materials, or else the moon is full of holes and air-pockets like a sponge. Zerko knew that the latter is true; but it is doubtful if he ever gave the former much consideration. Underground cities in the mining regions were not uncommon and other underground cities could soon be built in the large caves. He issued bulletins to the people, advising them to move as much of their belongings to these places as quickly as possible, and to provide food supplies enough to last for a long time.

He also advised them of another danger, the scarcity of pure air. He instructed them to provide as many of the atmosphere machines of old Tiverpo, by which artficial air could be made by transmutation of the elements, as time and machinery would permit.

TIDES produced by the sun were not uncommon on Dunel at this time; and Zerko knew that, as the menace came closer to his little world, tides of unusual height would be formed. He figured that they would rise high enough to cause the waters of the sea to pour into the caves and, unless precautions were taken, his refugees would be drowned like rats. He therefore ordered them to build at the entrance of the caves airtight and waterproof doors which could be opened and closed at will. He told his people that this was their only hope of safety when the collision occurred. But he could not guarantee that they would be safe even then; for all figures indicated that his world would be completely destroyed and their only hope was that some unknown force that he could not detect would cause the two planets to swing out of their path and avert the catastrophe.

Zerko's bulletins of advice saved a part of his race.

The greater part of the people ignored Zerko's advice. But over a million heeded them and carried out his instructions to the letter. Every available cave on the little planet was utilized and many of the doors erected at this time still remain. George Davis,

in his manuscript, has described one of them, which he saw at the cave in Mount Despair. The centuries have made them no longer airtight, but they are still in usable condition. It must be remembered that there are no winds, no rain, no storms and no moisture in the air to cause corrosion on the moon; making it possible to keep things in a natural state of preservation for thousands of years longer than could be hoped for on the earth.

Hundreds of thousands of atmosphere machines were prepared during the last few months, and as will soon be seen, they did not come amiss. And as the body drew nearer there was now no difference between day and night, for a blazing sun was shining on both sides of the little world at the same time. Barlenkoz, the big Menace, was now almost half as large as the sun as seen from the earth or the moon. Every time she rose above the horizon, her size was increasing. Long before anyone expected it, tides were formed which soon reached enormous heights. Many caves that could have been used by the refugees were filled with water. Work was hastened to make the doors watertight before it was too late.

Higher tides told them of the approach of the menacing planet they could no longer see. From all the seas of the little world, reports were coming in of ships washed ashore by the tides that were now over one hundred feet high. To get a correct idea of these tides, one must consider the daily tides that travel around the earth and try to imagine the result if the force producing these tides were six times as great, while the force trying to hold the waters to their beds were divided by six. Now consider the result if the two planets were approaching each other and the force producing the tides were increased each day; due to the fact that the force of gravity is influenced in inverse proportion to the square of the distance between the two bodies. Cities and towns along the sea coast were flooded one day, submerged the next and wiped out of existence the third.

The seas soon left their beds and combined into one huge tidal wave that swept around the little world as it turned on its axis once in eighteen and one-quarter hours. Storms increased in frequency and in intensity. Lightning flashed and the thunders rolled continually as the waters of the sea battered against the highest mountain tops. Those old craters were filled with water, destroying the Vudu cities and drowning the blacks like rats in a well. From many of the caves occupied by the whites, steam and hot water poured out, only to be followed by a terrible flow of smoke and lava. The survivors of humanity, who had never seen a volcano on their little planet, were too terror-stricken to know what they were doing. The titanic forces of nature were at work and the destruction of a world was at hand.

By this time Zerko's followers, over a million men, women and children, had entered their caves and closed the outer doors; but they did not escape the terrors of the destruction. Every device known to their scientists was in use; radios provided for their communication, television broadcasters located in thousands of places on the surface, enabled them to see what was going on outside. Food supplies were provided for a long siege; while animals and birds of every desirable species were taken along for companions.

The rotation of the smaller planet on her axis had been slowed up as the menace came nearer and the tides became higher. But at every rotation, hot water and steam from the interior came up and threatened to destroy the remnant of humanity. At each rotation the outside gravitational forces acting on Dunel became more severe. All loose objects were thrown violently about the caves into which had leaked an appreciable amount of water. If Zerko had not foreseen this

and taken the necessary precautions, it is doubtful if there would have been any survivors at all.

THE tidal waves, which had now reached unbelievable heights, were no longer composed only of the waters of the sea. Sand, mud, stones, ships, buildings, plants and seeds of all kinds, as well as bodies of animals and human beings, every loose object on the surface of Dunel had mingled with the water and atmosphere, forming a tidal wave that soon passed high above the loftiest mountain tops, traveling around the little world as she struggled to keep up a feeble rotation on her axis.

Suddenly the skies cleared. The tidal wave had left the smaller planet and was now to be seen like a huge cloud, moving toward the Menace, which now filled nearly half of the sky, turning over and over on her axis like a titanic spherical millstone, threatening to grind everything to pieces beneath it. The time scheduled for the crash was now at hand.

Two blazing suns beat down upon the helpless little world, robbed of all her atmosphere, water and plant life. The handful of survivors in the caves were waiting with terror for the approaching menace. From moment to moment, they expected the crash that would shatter their little world into pieces and destroy it in one titanic vortex of incandescence. But the time for the crash had arrived and the end did not come.

Roofs of the caves fell, as a terrible earthquake shook the little world to its core, opening the cracks in her surface, known today to terrestrial astronomers as lunar rills. Barlenkoz, which had been apparently moving from east to west across the sky, now remained stationary. Slowly the Menace, the two suns and all the stars began to move from west to east; Dunel had ceased to rotate on her axis and was now rotating in the opposite direction! A new terror gripped the hearts of the survivors as they witnessed this change in their television screens. "What had caused it?" they all asked in one breath, but no one could answer.

A ray of hope came to them when they noticed that the menacing planet was no longer approaching. The distance remained the same as the terrible sphere continued to roll over and over. Zerko now saw that the two planets were revolving around each other on a common center of gravity. Dunel had entered the gravitational field of the larger body; but her own motion in her orbit around the sun not only prevented her from falling to the surface of her enemy, but caused her to move farther away.

Then came another earthquake! The suns and the stars again changed the direction of their motion across the sky. Humanity was bewildered; no one had an explanation. The Menace had ceased to move across the sky, but still continued to wobble, maintain approximately the same position above the horizon. Quakes (I should say moonquakes) now occurred at regular intervals, which were getting shorter and the quakes were becoming less severe. With each succeeding quake, the motion of the stars was reversed and it dawned upon the survivors that Dunel no longer turned on her axis, but remained suspended in space with her heavier side turned toward the larger planet. The severity of the quakes soon became lessened, but the rocking motion of the stars continued for many years, until Dunel became adjusted to her new condition of being a satellite with her heavier side turned toward her adopted mother planet.

ALL danger of a collision had now passed, but the work of the Destruction was not yet complete. The alien sun and his family of planets had approached the solar system from the northern skies, crossed the plane of the orbits of the planets at an angle of about seventy degrees, passing again into the outer space of the

southern skies. When Barlenkoz and Dunel almost crashed, Dunel had entered the gravitational field of the larger planet and, according to Dunellian theory, they began rotating about a common center of gravity. But the motion of Barlenkoz toward the southern skies, as she followed her parent sun, carried her and her captive far to the south. For some time it was problematical which sun she would follow. She was nearer the sun that humanity had always known; but her motion toward the south was to be considered, as she was now far south of the plane of the orbits of the planets. The laws of gravity and motion compelled her to leave her old orbit, desert her mother sun and become a captive of the sun with the superior force of gravity. Her new orbit around her adopted mother sun was at an angle of about sixty-six degrees to the plane of the orbits of the other planets.

This eccentric orbit of Barlenkoz around her new sun caused her to turn her north pole toward the sun for a period of six months, while the southern hemisphere was turned toward outer space, perpetual darkness and absolute zero. During the next six months, the northern pole was in darkness, while the southern hemisphere was bathed in perpetual sunlight, without any periods of day or night. Once each year, each polar ice-cap melted; while the opposite frigid zone extended as far south as the Tropic of Cancer or as far north as the Tropic of Capricorn. In the torrid zone, the sun was overhead twice during the same year and never dropped entirely below the northern or southern horizon, even when the poles were receiving their maximum of light and heat.

The extremes of temperature were severe on Dunel. Robbed of her atmosphere, there was nothing to protect her from either extreme. As she now kept one face toward her captor, her days and nights had reached their present length, making life impossible at any point on her surface. Only within the caves, where the remnant of humanity had taken refuge, together with certain selected species of birds and animals, were there any conditions favorable to life. But even in the caves, it was very unpleasant and Zerko soon found that his followers were becomng restless and rebellious.

But even the mighty Barlenkoz could not always continue to disobey the laws of nature, which compelled all planets to revolve around the sun in approximately the same plane. The gravitational pull of all the other planets exerted a constant influence, although comparatively slight, toward their erring adopted sister planet. In attempting to draw Barlenkoz toward them, they pulled her out of her erratic orbit and the polar regions no longer received the light and heat of the tropics. But hundreds of centuries passed before Barlenkoz became stabilized in an orbit of her own, a few million miles farther away from the sun than the old orbit of Dunel.

No story of the Destruction is complete without an answer to the question of "What became of the black race?" It will be remembered that, owing to the intense hatred between them, the two races had no communication with each other; other than the stories of escaped slaves as they continued to join the many small nations of whites. At times radio and television messages were intercepted; but as a source of news, this was trifling. It was not until three centuries after the destruction that a group of white explorers entered a former Vudu stronghold, known to Terrestrial astronomers as Copernicus. In a cave-like building that had survived the destruction they found among other Vudu records a manuscript that told of their exodus from Dunel at the time of the destruction.

AFTER the destruction of Tiverpo and the threatened overthrow of their supremacy, they adopted every

plan imaginable to preserve their racial superiority. The attempt to make the whites sterile had brought about the rebellion that resulted in the escape of thousands of slaves and the establishment of the white nations. For a time the population of the slaves was regulated; but the rate of increase among the blacks was not fast enough to please them. On Tiverpo it had been illegal to mix the races. All children born of such illegal unions, as well as the white parent, were promptly sacrificed to the sun-god, in order to purify the soul of the erring black parent. But in this emergency, the debasement of Vudu blood promised the maintenance of Vudu supremacy. White women were forced to give birth to children of black fathers. The experiment proved successful, as the children were more black than white.

At the time of the destruction, the Vudu nations were on the downward trend. They had developed into scattered nations of three races: The dominant blacks, overfed, obese and lazy; the white slaves, overworked and underfed, and a brown half-breed race, denied the privileges of citizenship and exempt from the degradation of slavery. When the Destruction was foreseen, it was decided to seek refuge in their space-flyers until the danger had passed; after which they expected to make their homes on the larger planet, provided it were found suitable. The white and brown races were put to work conditioning their thousands of gravity-controlled spheres, which were already in use to provide a means of commerce and travel between their strongholds, and could be easily changed into space-flyers. The black scientists made a study of the menacing planet and made plans for the trasmigration. They believed not only that the new planet would be a better home for their race, but they would have an excellent opportunity to re-establish the ancient glories of Tiverpo.

After a study of the new world, the blacks decided to make their homes in the torrid zone. Probably they could foresee the extremes of temperature to which all land outside those regions would be subjected. But the result remains that Africa was selected as their future home and the most promising place of all was just south of the sea now occupied by the Sahara Desert, near the equator.

The war between the two races had now reached a climax. Millions of the black race had fallen, and millions were now engaged in keeping the whites from pouring over the high fortifications and storming the city. When it was least expected, the space-flyers rose from the city. Suspecting treachery, the black warriors fired upon their escaping countrymen and succeeded in bringing several of them to the ground. But the majority of the vast fleet continued to rise into the skies, leaving the doomed world behind them. An hour later the tidal wave arrived with increased fury, filling the crater of Copernicus with water.

The Vudu manuscript found a long time after in some excavations ends at this point. After the Destruction, no record is found of a black individual on Dunel. But the great race was not forgotten and it will be heard of at a later period in this brief lesson in interplanetary history.

CHAPTER VI

OVER a million white men, women and children had sought safety in the caves at the advice of Zerko. This number was reduced to a mere handful; only thirty thousand survived the terrors of the caves when the two worlds avoided a collision by the narrowest margin, and these few survivors were scattered in hundreds of caves all over the surface of the now dead world. The survivors proved to be as ungrateful as any other group of people on record. The history of the first few years following the destruction is a parallel of the story of the

Israelites turning against Moses in the wilderness and of the Spaniards turning against Columbus. It was here that Zerko proved his mettle and made a name for himself that will be revered as long as any of his race lives to remember it.

He knew that the air on the surface of his world had vanished with the water; so he issued orders to all the caves with which he could communicate by means of radio and television, to keep the airtight doors closed and to put the artificial atmosphere machines to work at capacity. Small valves were made in the doors to permit the surplus air to escape when a certain pressure inside the caves had been reached. He already knew how to produce a synthetic food by transmutation of the elements; this process was taught to all his people, who could now see that their original supply of provisions could not last indefinitely. But this new food was not very palatable and the people complained.

None of the old kings or rulers had survived the destruction. The survivors, representative of all the white nations, resented the assumed authority of Zerko. In one cave, the people stubbornly refused to obey anything he said. They informed him that they did not intend to stay underground and starve themselves on his artificial food. They were going outside to live a natural life on the surface, as all human beings should live. But when they opened the doors the air escaped and the rebels met an instant death. This incident taught the other refugees a lesson and Zerko had less trouble in maintaining discipline.

THE story of the next thousand years is the story of a hardy race fighting against the cruel conditions of their world and making their homes under the surface more habitable. They succeeded in raising the atmospheric pressure to a higher point than before the destruction. The new atmosphere was the same as that produced at a much earlier age by the Vudu scientists of Tiverpo. It contained no nitrogen, but a satisfactory substitute, and as we have learned this atmosphere was invisible, there being no water vapor in it to reflect light.

Because of the low gravity of their world, this artificial air seemed very light, but in fact it is much heavier than our own. To maintain a high surface pressure, the atmosphere must exist to a height of several times that of our own. This is the reason we encountered an atmosphere before we expected it, when we arrived on the moon in the *Astronaut*. Since the air is entirely invisible, a maximum of the solar rays are received during the day; but during the long lunar nights, this heavy blanket of air retains the heat for a long time and the temperature never falls as low as 68 degrees F. below zero, which has been recorded on the earth.

The heat of mid-day is enormous, but it has been greatly exaggerated by terrestrial astronomers, who say it is hot enough to melt sulphur (288 degrees F.). As a matter of fact, I am not prepared to give the maximum temperature ever recorded; but I never heard of its being too hot for human endurance, provided the periods of exposure were reasonably short.

Scientific progress at this period was amazing.

MANY thousands of years have passed since the Destruction. The history of the Selenites is not entirely one of peace and progress. They are human beings, and no amount of culture and progress can eliminate human characteristics and emotions. As long as there are men, women and children, human emotions must endure. As long as there are emotions of love, hate, joy, sorrow, jealousy, ambition, greed, and others too numerous to mention, dissatisfaction and unfilled desires will remain. As long as this is true, as long as the race exists, there will be trouble, wars,

injuries and disorders. Wars for independent government and separation from the remainder of the race, wars for freedom from tyranny either real or imaginary, wars for the ancient crown of Zerko and wars for no cause whatsoever are recorded in the earlier ages of their history. Murder, thievery and all forms of lawlessness have still endured. Since the earth has had, and still has, trouble enough of her own, I have no intentions of describing any of these troubles in this brief history lesson. But in the years to come, they will be studied by our own people, who will thus gain a newer and greater vision of the psychological characteristics of *Homo sapiens.*

It was a gradual change from progress to amusement, just as natural as a workman laying down his tools and starting to play. The changes from pleasure-seeking to indifference, and from indifference to boredom, were just as gradual and natural. A hundred centuries after the destruction, the age of boredom was at its height. For the first time in the history of the race, conditions had evolved that approximated the popular conception of Paradise. A minimum of physical exertion was required to supply the needs of the population. Further study of the secrets of nature and science was useless; for there was nothing more to be learned. Their subjects were all exhausted and they had not courage to search for new problems! Their arts and music had now reached the point where there was no room for improvement. Their world had been explored from center to circumference, nothing remained to be discovered. Their needs had long been oversupplied and their luxuries were too numerous to even be interesting. Their sports and amusements no longer offered a thrill and there were no new games or amusements to be invented or discovered. How they must have been bored during this age! The literature of the period was nothing but a series of lamentations over the intolerable conditions of oversupply, idleness and lack of outlets for their energies.

SUCH was the deplorable state of affairs when an adventurous group of thrill-seekers made the first voyage to Barlenkoz. After an absence of several years, they returned with amazing stories of a new and beautiful world that promised not only an outlet for their energies, but a new home for their growing population. At that time, the earth did not present the same geographical characteristics as the earth of today. The Sahara was still a sea and the Mediterranean did not exist. Just south of the vast Sahara Sea was the center of Vudu civilization. Hundreds of miles north of the Sahara Sea, in a great depression below sea-level, the site now occupied by the Mediterranean, was another Vudu center. During the preceding centuries, Barlenkoz had returned to an orbit almost in the plane of the orbits of the other planets; and the annual changes in temperature were almost equal to those of the present day. In the Equatorial regions, no changes in the seasons were noticeable.

Previous to this time, nothing is known of Terrestrial history. No one knows the exact problems encountered by the black race when they made their homes on the new world at the time of the Destruction of Dunel. How they overcame the effects of a superior force of gravity, which made them weigh six times as much as they did on Dunel, and trained their weakened muscles to carry additional burden, will always be a mystery. The Selenites have a theory, which is no doubt true, that the burden of the hardships was borne by the white and mixed races. Evolution, encouraged by changed conditions, no doubt came to their aid during a few generations, made them over, increased their muscular strength to an extent previously unknown and sacrificed mental vigor at the same time. At the time of

the first exploration the Terrestrial branch of the human race was capable of physical exertions that surprised the Selenites. But they noticed among them one amazing thing; they had almost abandoned the practice of standing on their feet when an opportunity was offered to sit down. The unusual weight of their bodies called for more muscular effort than they cared to exert. But the most difficult thing to understand was the fact that this weakness of the muscles of the legs has never been overcome and, even to this day, none of the Terrestrials will stand on his feet for hours at a time, if this tiresome position can be avoided.

History repeats itself. Events happen in certain sequences which vary only to the change of conditions of the various ages. I have already told of one cycle in Selenite history; the next age following that of boredom was an age of war between the two worlds, the result of which was the destruction of Vudu supremacy on the earth, the release of millions of white and brown slaves and a reversion from civilization almost to savagery among all branches of the Terrestrial human races. The destruction of the blacks might have been complete, had they not learned the identity of their enemies and carried the field of battle to the moon. The war was no longer a pleasure to the Selenites, who did not dare to leave their underground cities. The solar power plants of the moon, one of which was located at Tycho, were demolished. Vudu spheres guarded the entrances of all caves and fired upon every Selenite attempt to escape. This ended only after a siege of over a hundred years, during which the Selenites gave up all hopes of ever leaving their caves, and the Vuduites thought their ancient enemies had starved.

After this, the Selenites decided that war should be outlawed and all young men and women were taught that it is the most degrading of all pastimes. The effect of this propaganda has persisted through all succeeding ages of their history. Over thirty thousand years have followed without war.

In the meantime there ceased to be communication between the human races. Their languages had undergone various stages of evolution until conversation became impossible. In spite of the fact that war had been outlawed by the Supreme Council of Dunel, there arose groups animated by a desire to revenge themselves on ancient enemies. This took place without the knowledge or sanction of the Supreme Council, and a punishment of banishment to Barlenkoz, was given all offenders.

AFTER the first war between the worlds, during which the population of Dunel was greatly decreased, because of the destruction of their solar power plants and the lack of sunlight and ultra-violet rays, a period of progress and prosperity followed. During the second cycle of progress, inventions did not follow each other in such rapid succession. Consequently the age of progress lasted longer. The most noteworthy of developments was the prolongation of human life.

It was found that old age was caused by the improper functioning of certain parts of the body; to name these would be to name every organ of our bodies. In some cases, the liver and kidneys did not cast off the accumulating toxins, waste matter and poisons properly, causing all the tissues to harden and weaken. In other cases the stomach and intestines did not function properly; but always a cause was found. At first drugs and stimulants were used with very good results; but nothing short of immortality could satisfy the scientists, who were just beginning to penetrate the surface of this new subject.

The use of invisibility made it possible to study the action of the heart, stomach, and other organs in conditions of perfect health and all degrees of imperfection.

Food was found to be responsible for many of the weaknesses and for centuries it received much careful study and attention. This resulted in the periodical examination of each individual for the purpose of ascertaining how his food was agreeing with him. Each person was given an individual food prescription, calling for certain quantities of starch, fat, proteins, vitamins, minerals and other required elements. This was his prescribed diet, which he was compelled to eat to the exclusion of everything else, except a prescribed amount of pure water at certain intervals. By the time this system was perfected, the span of life had been extended to four or six hundred years.

But with the years added to human life, a new danger arose. The people no longer died after reproducing their kind, according to the plans of nature, and there was no room for their posterity. The population was increasing to the point where it was impossible to take care of the increase. They were confronted with the necessity of a choice between abandoning the new system and regulating the number of births. The scientifically-regulated birth-control has been described in an earlier chapter of this manuscript. The internal disorders and rebellions that followed its adoption were the most serious in the history of Dunel; they represented the death struggles of a class deemed unfit to propagate their kind. But by the year 80,020 S. D. (my own abbreviation for Since the Destruction) the population had been regulated to the extent of keeping the births in proportion to the decrease by deaths, without any serious rebellions on the part of the undesirable classes, who were denied the privilege of reproduction.

By permitting no one to reproduce until late in life, long life was made a natural racial trait among the Selenites. During seventeen hundred and sixty centuries that have followed, the ancient methods of prolonging life have been constantly improved until the present time, when periodical surgical operations for the correcting of physical organic imperfections are a part of the routine of life. It has reached such a degree of perfection that, today, it is seldom a single person can be found who has not always enjoyed perfect health. It is not uncommon for a person to live 1400 years, having never during his life known the sensation of sickness or even the toothache. My own set of false teeth caused much interest among the Selenites; but no less wonder than that experienced by me when the teeth of an old man of over 1300 were submitted for my examination. To my surprise there had been no extractions, no abscessed roots, no cavities, crowns or fillings; it was a perfect set of teeth! It is due to the knowledge and skill of these Selenite surgeons that I, an old man of another short-lived race, have been restored to my youth, with prospects of centuries of life ahead of me, if I return at the proper time and continue the treatments; but even the Selenites themselves have no idea that my life can be made to equal their own. At present I am in constant fear that I will contract some terrestrial disease that will put an untimely end to my promising career. I have been breathing terrestrial atmosphere now for two weeks and, for the first time in ten years, I am suffering from a bad cold.

I FIND it impossible, in a brief manuscript, even to outline the events of each cycle of the history of the two worlds. In a future work, this will be done. But, at present, I will simply point out the radical differences between the development and evolutionary changes of the two worlds. On Dunel, existence has depended upon scientific knowledge; while on Barlenkoz, it has depended upon muscular strength, fighting ability and war-like tendencies. On both worlds, the survival was that of the fittest. On Dunel, the scientist survived and the fighter perished; on

Barlenkoz, the black race of scientists degenerated to the most primitive conditions of savagery, due to their inability to cope with strange carnivorous animals, strange diseases and powerful, rebellious slaves; until the white race of fighting slaves at last came into supremacy. On Dunel, each cycle was complete. There were ages of progress, followed by ages of pleasure, boredom and dissatisfaction which continued until some disaster or radical change was brought about; after which necessity demanded activity and progress followed. It was a case of building up, utilizing and then tiring of former achievements; ending in destruction, which was often caused by internal rebellions and building up again. On Barlenkoz, it was a case of trying to keep a great civilization from falling to pieces. Progress was achieved through warfare, by plundering weaker nations. Africa was at one time the center of Barlenkozian culture; but this could not endure against an overpowering host of enemies, consisting of torrid climate which produced disease and laziness, remnants of life that once roamed over the earth when she was a member of another solar system, and the most powerful of all enemies, savage cave-men, escaped slaves carrying on an existence of their own through the power of their muscles and the cunning of their dormant minds. Added to this was a race of intelligent men from another world, who disobeyed their own laws and raided the helpless black cities, using invisible space-flyers and disintegrating rays. The blacks were surrounded on all sides by enemies, many of whom were unseen. What civilization could endure under such conditions?

At last there came a day when their unseen unknown enemies in invisible space-flyers destroyed their cities and their people by the millions. Only in the depths of the luxurious jungle vegetation could they find safety from unseen foes. Only by primitive means could they continue to survive. This was the end of a great civilization. Will it be rebuilt in the future? Will the blacks ever again rise to supremacy? Is there a fate in store for the white race like this? Who knows? History repeats itself. One race can not always be dominant. No doubt the blacks will never again rise to power, but the supremacy will go to another race, probably one of the mixed yellow or brown races, whose origin we have already seen.

After the overthrow of the black supremacy, less than fifty thousand years ago, the Selenites no longer saw any immediate danger from the "Big Menace." The extreme gravitational conditions, the dangers of contracting terrestrial diseases, and the lawlessness on the part of the explorers, who did not consider themselves under the jurisdiction of their Zerko when they were on another world, caused the Supreme Council to prohibit any further explorations. But the interesting things of the new world were not forgotten. As each Zerko came to the throne, it became one of his first duties, either to send an exploring party to Barlenkoz, or to conduct the exploring party in person. At times, the crown prince was permitted to make the exploration just before the coronation, if he wished to do so; and thus relieve himself of the necessity of leaving his people after he had assumed the duties and responsibilities of a Zerko.

These explorations were made at intervals ranging from twenty years to five hundred. Motion pictures recorded everything of interest. These pictures are still preserved and form a part of the education of the Selenite youth. From these records it is possible to trace the migrations of all the prehistoric nomadic tribes and thus fill this great gap in our history. The time arrived when their records show Atlantis, populated by whites of a criminal class banished from Dunel, as the greatest terrestrial civilization. At times it looked as if certain people of a mixed race in China would be the

dominating race; at other times India held great promise. Early Egypt, with scenes of the building of the pyramids, monuments and cities, is fully recorded.

Actual scenes taken from ancient Babylon and other cities long reduced to dust and forgotten, give a better knowledge of conditions than the few records in our possession. At a later period, cities of Persia, Egypt, China, Greece, Atlantis, Yucatan and Peru show a steady degree of progress. But one thing was observed in all records of Terrestrial exploration, that was very distasteful to the Selenites, who had long ago decided to abandon warfare. No exploring party ever returned without pictures of Terrestrial wars. It appeared that the Terrestrial branch of humanity was degenerating into blood-thirsty nations and some day Barlenkoz would be a genuine menace; if the Barlenkozians ever reached the point where they were able to cross the great barrier erected by Nature to isolate small worlds from their more powerful and warlike enemies.

DOROTHY Brewster's progress was a marvel and we three men had all we could do to maintain the traditional masculine superiority. To be perfectly honest, I am compelled to admit that, for once, we let a woman beat us.

We were not together at all times. Our instructors would send us to various communities to study certain things, and we were often in the company of Selenites exclusively. We were always spoken of as Barlenkozians; which, at first, implied about the same reproach as the word "heathen" carries in our country. But we have given the word a new meaning which is quite in contrast with their former conception of Barlenkozians. To change a national attitude toward the characteristics of another race has been found almost impossible on the earth; but I do think Barlenkoz now stands so much higher in the estimation that their former established prejudices are entirely refuted. I want to impress upon my terrestrial readers the necessity of maintaining the reputation we have tried to create; for our prestige among them is by far a more valuable asset than can be realized at present. Our relations with the Selenites in the future will be of a nature profitable to both worlds, and the most important thing is to convince them that our world is no longer a "menace" to them.

During our work in their schools, we determined to work twice as hard as we had ever done in any terrestrial university, in order to make a showing that would compare favorably with the work of the young Selenites. It did not take us long to make an important discovery, which proved very valuable to us. Education is compulsory for all Selenite students, before they can be admitted to citizenship. It is very seldom that anyone is denied citizenship, and their students know it. I have had enough experience with the students of Belmont to know all their tricks of bluffing the professors and shirking their work. It surprised me when I learned that the Selenite instructors tolerated these conditions, and graduated students that were far below the required standard. Because of laziness on the part of both students and tutors, their progress is slow, so that it is not surprising that fifty years are required to complete their education. The ignorance of many Selenites about the very subjects emphasized in school is noteworthy.

Scientific subjects compose the greater part of their curriculum, and these are taught and studied in about the same way as our own dead languages. Interest is lacking, and original uses for old scientific principles are not encouraged. We found many facts that have never been exploited and developed and, when we told our instructors of new uses to which they could be put, it aroused no interest. They are taught and studied with the same in-

difference as that shown by an engineering student when he attempts the declension of a word in ancient Hebrew. They are not living in a progressive age and original thought is not encouraged.

When we saw the indifference of their own students, we were encouraged. Not only were we able to come up to their standards, but we had no difficulty in making a record that will stand for some time as an example of what can be accomplished as students. After seven years of the hardest work we had ever done in our lives, our education was pronounced complete. After a ceremony in which we were graduated and admitted to citizenship, we received the congratulations of the Supreme Council and our many friends, who no longer constantly reminded us that we were of an inferior race. Since we had the start over Davis, he has a few more years to spend before he becomes a citizen; but he is progressing very nicely and may even be able to break the record that we have set for him.

We were now ready to select the professions we chose to follow, and take up our duties as apprentices until we were masters of our professions. Winters insisted upon being a chemist, and Lacey thought himself capable of becoming a greater inventor than Edison. I had almost decided to become an instructor and try to speed up the educational methods, while Miss Brewster had never mentioned her plans for the future.

After Zerko Tarkomas had informed us of the decision of the Supreme Council regarding our disposition we considered it final and made no further effort to secure permission to return to the earth. My greatest regret was the decision regarding the marriage of Prince Baklo. It was my personal opinion that the time would come when Baklo would renounce the throne, marry the woman of his choice and take up the life of a private citizen. This had been done in the past, and I felt sure that it would soon be done again. When I discussed the matter with Miss Brewster, she told me that Baklo had suggested this procedure, but she could not permit it. She had told him that, if he should refuse the highest honor his people could give him, she would not have him as her husband; for the time would surely come when he would regret the sacrifice. She reminded him of his duty to his world, and told him that she would always be happy to remain a private citizen if she could see her lover on the throne of his fathers and know that her sacrifice had made this possible.

During the years in school, she had apparently given up her ideas of matrimony as hopeless; but I could see below the surface and knew the suffering she tried so hard to conceal. Occasionally we heard from Baklo, but his messages were very formal and brief. They contained nothing that he would object to have published to his people. At times I thought he had forgotten his love affair; while she proved her mettle by appearing to be pleased to know that he was not suffering the pangs of a hopeless love.

SOON after we had finished our work in school, Dorothy proposed a trip of exploration over the lunar surface. Lacey and Winters did not care to go, for they were too busy making plans for their future careers. I was glad of the opportunity, as I wanted to visit Mare Crisium and see those strange Flat-footed Selenites. We secured a small gravity-controlled sphere and started at the beginning of the long lunar day. We decided to follow the illuminated hemisphere around the little world and return almost six terrestrial weeks later, when the sun would be dropping below the horizon at our starting point.

We were alone on this trip and took turns sleeping and handling our sphere. We enjoyed the trip immensely; for this was the first time in years that we had seen the sun. I shall not attempt to describe the entire trip,

nor our amusing adventures with the "bideens" or Flat-footed Selenites. As we crossed the Sea of Serenity, Dorothy pointed out the spot where she had seen Baklo marooned years before. She pointed the way and I directed our craft to Mount Despair. Tears were in her eyes as she pointed out the high rock, behind which she had seen Baklo rest just before the fire that had destroyed the Brewster Observatory. She was living the cruel scenes over again, and my heart ached at the thought of her dangerous voyage across space in the *Astronaut* and the present hopelessness of her love for Baklo.

We moved over to Mount Despair and came down to an elevation of about two hundred feet. As usual, the day was very hot and the windows of the sphere were all opened. We stopped to examine the sealed entrance of the cave; when suddenly we heard a voice below us among the rocks. We recognized the song as one popular among the Selenites, and the tones were strangely familiar. A few minutes later the voice began singing in English:

"Dear one, the world is waiting for the sunrise;

Every rose is covered with dew—"

"Who is that?" I asked: "It can't be Davis, Winters or Lacey."

"The thrush on high, his sleeping mate is calling—"

The rich baritone voice continued.

Dorothy seemed to be awakening from a trance, her blue eyes sparkled; a blush came to her face and a new radiance that I had not seen for years came over her. "I'd recognize that voice anywhere," she answered as the singer continued:

"And my heart is calling you."

"Baklo!" I exclaimed as I recognized a characteristic difficulty with the last high note: "Where is he?"

My question was answered before it was spoken. Dorothy had seized the control of our sphere and had brought it to the ground. Cautioning me to be quiet, she stepped out and moved silently and swiftly among the rocks toward the singer, who was just concluding the last line for the second time.

"And my heart is calling you." Dorothy sang as Baklo had finished.

Baklo turned around with a startled, but happy expression on his face:

"Dorothy! Have you come to rescue me from my melancholy thoughts?"

"Do you need rescuing as badly as you did when I first found you here?"

"I need you more than ever," he cried as he took her in his arms. "You have been on my mind continually since we parted eight years ago. Here at this spot, where we used to be together, I can find peace. Let us stay here for the remainder of our lives; let me renounce the throne so we can marry. We will never find happiness until we do."

"And we would never be happy if we did. If you married a Barlenkozian you would be disgraced."

"Let us take a space-flyer and go to your world; we would not be disgraced there and we would find the happiness to which everyone is entitled."

"Baklo! I am ashamed of you! You will soon receive the crown of your fathers. For years you have been prepared for that high office. Would you betray the trust they have in you? Do you think we would ever find happiness at that price? Before I would permit anything like that, I'd take my own life; and in the years to come you would find another to take my place in your affections."

"No one can take your place in my affections. If I live for twenty centuries, I shall never marry again unless I marry Mother Earth's Fairest Daughter."

CHAPTER VII

THE remainder of the conversation of the reunited lovers must remain untold. As soon as she saw Baklo, Dorothy had forgotten all about me, and Baklo was too interested in

her even to notice that I was in their company. It was a case of three being a crowd; so I decided that the strange lunar vegetation should occupy my attention.

After spending hours examining certain brown vines and grasses, I decided that the sun was too hot for intensive research; so I went back to our sphere and went to sleep. I was aroused some time later by Baklo calling me to come over and join them.

"Dr. Haverfield," Dorothy began when I had joined them, "how would you like to sit down to an old-fashioned dinner like we used to eat at home?"

"Don't joke with me, Dorothy," I replied: "It requires all the will power I have to eat these synthetic cakes. When I think of roast beef with baked potatoes, or pie and fruit, my diet becomes so terrible that I can not eat it."

"I am not joking with you; I mean it. Would you be willing to enter into a little conspiracy with Baklo and myself to get our supplies out of the cave in Mount Despair and give a banquet to the Supreme Council?"

"I'd be glad to help, but I have my doubts if there is anything there that is fit to eat after a period of ten years. I doubt if the Supreme Council would let us touch anything from the earth that is full of terrestrial microbes."

"Baklo and I have been discussing the matter, and we have decided that it will be worth the effort. He has been talking to the Zerko and several of the Buzerks about barbecue sandwiches and oranges; and their curiosity has been aroused to the point where they are actually anxious to sample natural food. As for their qualities of preservation, you will remember that I bought the best grades I could find before the *Astronaut* started for this world. Furthermore, I had a special order filled which called for extreme care in their preparation, to insure their preservation for a long time. For ten years they have remained in a dry, dark, cool place; and I am positive that enough materials are in good condition to make a splendid banquet for the Supreme Council and their wives. What do you think of the idea?"

"You may think me selfish, but why do you want to banquet the Supreme Council? They were very selfish when they refused to let us return to the earth and they were not very kind when they prohibited your marriage. Why can't we keep our food for our own use?"

"Would you rather do that than return to the Earth?"

"What would the banquet have to do with our returning to the Earth?"

"Perhaps nothing at all—and perhaps it may be such a thing, that they will send us back to the Earth to get them more natural food."

"I begin to understand. The plan sounds interesting and the experiment may be worth trying."

Some time later it was learned that Baklo had taken the matter up with the Supreme Council and permission had been granted to secure the food supplies and give the banquet, provided certain precautions given by the proper authorities were taken.

This plan called for selected criminals to enter the caves and carry outside the boxes and barrels, which were treated with a heat ray to destroy any bacteria that might remain. This, of course, destroyed the paper cartons and some of the wooden boxes, but the barrels stood the test very well. They were placed in a separate compartment of the sphere and carried to a location on the other side of the moon, where they were immersed in boiling water. When this operation was completed and the boiling water was drained off, they were considered sanitary and we were permitted to touch them.

An examination of the sterilized containers showed us that about ten percent of the canned fruits and vegetables would have to be destroyed, as they did not look any too good. A barrel of flour was apparently as good as the day it left the earth; the two bar-

rels of corned beef were in excellent condition. The hams and bacon had dried out a little too much and smelled strong but, with the exception of being tough, they were still in edible condition. Of course all the fresh fruits had spoiled; but they had dried up rather than rotted. Considering our desire for food of this kind, they could still be eaten and relished.

We four Barlenkozians were authorized to prepare the banquet. Davis secured permission from his instructors and volunteered his services, which we were glad to accept. This was a new experience for Lacey and myself; but we knew a little more about it than the Selenites. Miss Brewster is an excellent cook and, under her direction, we tackled the job with an enthusiasm that would make a French chef turn green with envy.

Orders were given for plates, knives, forks, spoons, dishes and cooking utensils, which had to be made for the occasion. These articles were entirely unknown to the Selenites who, for over two hundred thousand years, were accustomed to eating nothing but cakes of synthetic food, which came to them wrapped in paper, and were eaten, with their fingers. It was an interesting experiment for me. No one could foresee how they would react under these conditions. My former experience had shown me that the Supreme Council was the very personification of dignity. I had assumed that they carried this dignity with them at all times and, like terrestrial kings, tried to maintain their traditional superiority in private life. I did not consider the fact that Prince Baklo had always treated us as social equals and that months had passed before we knew that he was of the royal family. I forgot that Dunel is unlike any terrestrial nation in government. The Zerko and Supreme Council are both more autocratic and more democratic than any of our rulers or lawmakers. In the council chamber their dignity and power is absolute; in private life they are on an equality with their neighbors, with whom they participate in games and other amusements.

Had I taken this into consideration much of our trouble and much of our fun would have been lost. If I had spent as much time in worrying about their ignorance of terrestrial etiquette as I spent in worrying over my own inexperience in serving royalty, the banquet would have progressed differently. I imagined that their scientific minds would appreciate the opportunity to study and learn terrestrial habits. But I was soon to learn that they were men of the same sort one meets every day at home, men who do not care to be educated when they expect to be amused and never seek an education while seeking pleasure. Their own ancient records, which told of the race when it lived on a diet of natural food and found pleasure in eating, together with Baklo's description of barbecue sandwiches, were no more significant to them than the description of red or purple to a blind man. I do not mean to say that the sense of taste had perished; but they could only imagine that a new and exquisite pleasure awaited them at the banquet.

AT last everything was prepared. Long tables and chairs were arranged in an orderly manner; but the scene presented the appearance of a military mess-hall, rather than a banquet room for royalty. The guests arrived. Thomas Jefferson riding a black horse to the capitol on inauguration day was a royal autocratic figure compared to these hundred per cent democratic lawmakers. I had expected Zerko Tarkomas to lead a royal court, something like that of Louis XIV; but the royal arrival was more like that of a crowd going to a prize fight.

There was but little difficulty in getting the guests seated. It was my intention to serve but small portions of each food separately, and give an explanation of its origin and preparation for use. I thought this would be inter-

esting to them; but they were seeking pleasure and not information. We had accepted the offers of several of our Selenite friends to act as waiters, but they were very inefficient. They could not remember the order in which the food was to be served. One ambitious waiter served apple pie as the first course, another selected ice cream, which was made from canned condensed milk. Another, who had been assigned to the table where Zerko Tarkomas was sitting came in with generous helpings of boiled corned beef. It was my first experience in serving royalty, and I was interested only in doing my own work properly and observing the effect on my guests. I did not notice what was going on elsewhere. I was busy demonstrating the use of the soup spoon when suddenly there came a scream from one of the ladies' tables, where ice cream was being served. One of the guests had not even taken the trouble to wonder what the spoons were for and had started to eat ice cream in the manner in which she was accustomed to eat synthetic cakes. The ice cream was a trifle too cold, or too slippery, or something; but at any rate it proved uncontrollable, slipped from her fingers just as it reached her mouth and fell into the loose folds of her low-necked dress. Pandemonium reigned in that end of the hall until Dorothy arrived on the scene and led her from the room, where the difficulty was removed.

Zerko Tarkomas was gazing at his corned beef with the attitude of an American who is being served horse flesh. He suspected that it was the flesh of some animal and did not know whether to eat it or not. He saw that his friends were eating it and enjoying it; so he summoned bravery enough to taste it. It must have met with his royal appetite; for when I next looked at him, he was eating corned beef just as a small boy eats watermelon.

As I glanced at the table where apple pie was being served, I saw that the Selenite waiter was having trouble of his own, but for a different reason. Apple pie is handy; it may be eaten either with a fork or, as our royal guests preferred, with nature's own equipment. But one piece of pie did not last very long; for the guests refused to take a chance on soup and were clamoring for more pie. Rather than offend them, the waiter served more pie, with the result that all the pie was being consumed at one table.

The Selenites knew no more about proper eating than does a terrestrial child, the first time his mother places him in a high chair. They were very hungry, but they were unable to distinguish between the different kinds of food. If the first sample was satisfactory, they could see no necessity for a change to something that might prove to be inferior. We have seen what happened when pie was served; the same was true of ice cream, fried ham, corned beef, soup, bread, cakes, and canned fruits and vegetables. Their only name for the different varieties was the equivalent of "Natural Food." Zerko Tarkomas ate nothing but corned beef; the queen had fried ham, and after the banquet, both thought they had eaten the same thing. Ten years earlier, Baklo had refused to eat anything but barbecue pork sandwiches, oranges and pie. At the banquet he did not get a chance to eat anything but baked beans; after which he informed the other guests that natural food was much better when eaten fresh. His statement was true; but he did not know that the beans he had just eaten had been brought to his world in bags, in a dry uncooked condition and had been baked just before the banquet. But as for fresh food, I doubt if the average American housewife would have considered these ten-year-old canned goods fit for her table. Its age, however, did not make any difference to the Selenites, who were eating it with gluttonous appetites.

The banquet was progressing nicely, if one considers nothing but the

enjoyment of the guests. But, to a master of ceremonies, everything was out of control and it was impossible to restore order. Our guests were clamoring for more food and our waiters were trying to supply the demands. There were only six of our guests who registered complaints and they had genuine grievances—their waiter had served them nothing but olives. It had not been my intention to serve olives at all; but one waiter knew only that they were food and not that one must acquire an educated taste before olives can be appreciated. He did not hesitate in taking a half dozen jars, our entire supply, and serving them to six Buzerks who were showing they were hungry. These guests ate the olives, but decided that natural food was less palatable than their own synthetic cakes.

I was trying to convince the guests seated at my table that we had something to eat besides soup (they had found it handier to drink from the plates than to bother with awkward spoons), when George Davis came to me with a very important question:

"Is there any danger of too much corned beef hurting anyone?"

"There is danger in too much of anything; what's wrong now?"

"Just look at that old fellow over there! That makes seven hunks of corned beef larger than his fist! I can't make him stop eating, and I'm afraid he will kill himself!"

"That is Zerko Tarkomas, the king of the moon," I replied: "This banquet has gone far enough! Tell the waiters to stop serving! Our guests will kill themselves."

"It's a pity to make them stop so soon," Davis replied: "They've only been eating for eight minutes."

"Seven hunks of corned beef in eight minutes! They must stop at once!"

"It's eight hunks in eight minutes, Doc," Davis replied, evidently thinking it was very funny: "The old king has eaten another hunk while we have been talking."

CHAPTER VIII

THUS the banquet ended. Our fun was over and our troubles started. Their veneer of civilization was at least four centuries thicker than our own; but on this occasion, culture had been thrown aside and only an unsatisfied primitive hunger remained. Countless generations who had longed for the food provided by nature, inherited dissatisfaction with synthetic food, combined with customary indiscretion in the pursuit of pleasure, had caused them to forget everything but the demands of an appetite for something, they knew not what. It was only by forcibly removing all the food in sight, which was almost as hard as taking meat from a hungry lion, that the banquet was brought to an end.

The next session of the Supreme Council was the biggest failure since its organization. Only thirteen Buzerks were able to attend, and they were in no condition to discuss the affairs of state. The only thing accomplished was a denunciation of Barlenkozian food as full of malignant microbes; almost all who had eaten it were sick with some loathsome Barlenkozian disease. It was decided that the offending Barlenkozians should be imprisoned under charges of "either knowingly or unknowingly, attempting to murder the entire Supreme Council and their wives and releasing malignant microbes of some unknown variety among the people of Dunel."

In our prison we had a chance to think things over. It was now certain that our last straw of hope for returning to the earth had vanished. We received no news of our guests and had nothing but guess-work to tell us how many of them would die. A few hours before we had thought the banquet a humorous affair; now grim tragedy stared us in the face. Would irate citizens storm our prison and mob us? If they did let us live to appear before the Supreme Council, what punishment would the victims of the banquet see fit to give us? Would their ancient

hatred for Barlenkoz influence them to such an extent that justice would be denied us?

It seemed like a lifetime before we were ordered to appear before the Supreme Council for trial. The big question in our minds was the number of fatalities. As we were led into the Council Chambers, my first impulse was to count the number present. I soon saw that this was going to be a difficult task, so I began looking for empty seats. To my astonishment, I saw none. But this proved nothing; for each community council always had a Vice-Buzerk ready in case of the absence of the Buzerk, to make sure that their community council would always be represented. I saw no new faces and none of those present appeared to be sick. But their expressionless faces concealed their thoughts and there was no indication of the emotions beneath. Zerko Tarkomas presided in all his royal dignity. This was encouraging, since our greatest fears had been for his personal health. When we were seated, he rose to his feet and addressed us:

"It is with regret that you Barlenkozians, to whom we owe so much, are thus summoned before the Supreme Council of Dunel. I take no pleasure in telling you that you have been charged with attempting the murder of the entire Supreme Council and their wives, and releasing malignant microbes of some unknown variety among the people of Dunel. What have you to say?"

"We are not guilty," I replied as I rose to my feet: "We are sorry for the ill effects produced upon you. Had we foreseen the results, we would have never asked for permission to give the banquet. We are anxious to know the number of fatalities."

"Due to the efforts of our best scientists, who were able to remove the foreign matter from our stomachs, no fatalities resulted. They were ordered to make an analysis of the food and to search for malignant microbes. Fosog, one of our best authorities in the matter of food and digestive hygiene, is now ready to report."

This was the first time I had ever seen the famous Fosog. He was over twelve hundred years old, but did not appear older than a Terrestrial of forty-five. His entire life had been devoted to the subject of proper food production and the care of the digestive organs. I had always wanted to meet this famous character; for he was the only present-day Selenite of whom I had ever heard who did not try to avoid an argument. A mental combat is rare in that world; they do not like to argue, though to me a good hot argument is the spice of life. From all reports, Fosog was a man after my own heart. No one dared dispute anything he said, and he had found no difficulty in rising to the head of the department of food production almost one thousand years ago. When William the Conqueror first invaded England, Fosog was one of Dunel's foremost scientists. During the reign of two Zerkos he had supervised the production of food. He had a deep respect for his own importance and knew his own subject better than any of us; but he was entirely lacking in a sense of humor.

AMID enthusiastic applause, Fosog rose to his feet to deliver his report:

"We find no bacteria in the natural food, other than certain harmless varieties common on Dunel. We are of the opinion that the heat ray and the boiling water, with which we ordered the food to be treated before the banquet, are responsible for the destruction of Barlenkozian microbes. The few bacteria that we did find must have entered the food since that time. We believe that the illness of those who ate it was caused by a natural fact that requires some explanation!

"These Barlenkozians, as you all know, come from a race that is our intellectual inferior. To compensate for this mental weakness, Nature has

given them greater muscular power and stronger digestive organs. This fits them for the natural conditions of their own planet. Just as Nature has equipped all the lower animals with digestive organs capable of extracting food units from coarse grasses and other raw vegetation, the Barlenkozians have been provided with stomachs capable of digesting this kind of food.

"We find Barlenkozian food unfit for Selenite stomachs. We ask that laws be passed immediately, forbidding our people to eat it. Although we did not endanger our lives by tasting it, we do not doubt that it is more pleasant to the sense of taste than our own. But we have a remedy for that. These strange, pleasant flavors can be produced by artificial means and added to our food, which has been proven perfectly adapted to our use. We can then enjoy the flavors of natural food without exposing our stomachs and other vital organs to unnecessary dangers. I shall now pause until you have passed the laws for which I asked. I will then conclude my report."

There was great applause and excitement from all the Buzerks who lost no time in passing, unanimously, laws prohibiting the use of Barlenkozian food by all Selenites. But since it had formerly been our natural diet, we were permitted to use it as long as our supply should last.

During this delay, George Davis whispered to me: "Doesn't old Fosog think he is the whole works? Wouldn't you enjoy making a monkey out of him?"

"I would indeed enjoy it!" I replied: "He appears to be tottering under ideas of his own importance and our own inferiority. I consider it an insult of the first magnitude to speak of Terrestrials as an inferior race with stomachs like lower animals. If I get a chance to answer him this Supreme Council is going to hear something that will show them which is the superior race. I can hand out insults just as fast as Mr. Fosog, if he wants to lock horns with me."

"Dr. Haverfield!" Dorothy interrupted: "You'll do nothing of the kind! You will say nothing to offend or insult anyone. I have plans for a more effective humiliation of this super-scientist of a super-race, and a complete victory over the Supreme Council. Just wear your muzzle a little longer. Then we will all charge this wolf pack together and, for the first time in his life, Fosog will find himself in the midst of a real argument."

"There is no time like the present," I told her.

"Argument overruled. If you get a chance to talk, don't forget your dignity and don't get offensive. We have not yet started to fight."

Fosog began the conclusion of his report with a denunciation of natural food: "It is small wonder that the Barlenkozians lose their teeth, after eating such food. It is responsible for their diseases, against which we have tried to protect ourselves. I am not surprised that they never live for a single century. Their energies are all consumed in digesting coarse foods, unfit for human stomachs. The results of our analysis of this food are surprising. Eighty per cent. of the samples examined were composed mainly of water! In some cases, starch was entirely lacking and in others there was nothing but water, starch, salt and undigestible matter. Fat, of a poor variety, made up the bulk of other samples. The work of separating the food from the undigestible matter is enough to exhaust the resources of any digestive system in half a century.

"But the most surprising thing about Barlenkozian food is the attraction it has for bacteria of all kinds. If bacteria of disease were present in our atmosphere, as they are on Barlenkoz, this food would have caused the death of those who ate it. You owe your lives to me; for it was I who demanded that this food be treated with the heat ray and boiling water before you

used it. Furthermore, it was due to the supreme effort on the part of my department that your stomachs were emptied of their loathsome contents. Less than one dirumo after the banquet, bacteria of decay had entered the remainder of the food and the odor produced prohibited further investigation without the use of a mask. If this is the only diet of the Barlenkozians in their native state, they are unworthy of membership in the human race. I want to warn the Supreme Council against accepting invitations to dine with beings of a lower class. If you receive an invitation from the flat-footed bideens to share their diet of vines and grasses, do not accept it."

We could not suppress a laugh at his conclusion. We thought it was intended as a joke, but Fosog was never more serious in all his life. Neither did the Supreme Council see anything funny about it. I never saw such a lack of a sense of humor. Zerko Tarkomas asked me to explain our amusement.

"I was simply laughing at the ignorance of Fosog," I replied.

"Who are you to speak of my ignorance?" Fosog demanded.

"I am the man who can give you instructions about food of all kinds. If you had asked for information in the first place, you would have never made such an absurd and ignorant report. Barlenkozian children of six years of age know more about——"

I did not get to finish my answer. I was stopped by my own party, who forcibly placed me in my seat with orders to be silent, while Miss Brewster did the talking.

"I WILL ask you to forgive the insults of my friend, Dr. Haverfield. It is one of his failings that he is unable to control his emotions when someone makes what he considers a mistake. He once had the reputation of being one of the most forceful talkers of Barlenkoz. He enjoys an argument. Mental combat is his favorite sport and he has never yet been defeated. He comes from a race of fighters and from a world of strife and combat, both mental and physical. When angered, Dr. Haverfield is more than the equal of a score of normal men. I must apologize for his conduct.

"I will attempt to explain his objections to the very intelligent report of your capable scientist. We Barlenkozians do not consider any one food perfect. Our diet includes small portions of different kinds. At the recent banquet, we were unable to control our guests, who did not know the dangers of eating one food by itself. When one has learned the taste of different foods, the sense of taste tells what should be eaten. Even with our strong stomachs, we never eat until entirely satisfied. At the banquet, each of you ate enough for four Barlenkozians. With your own food, you never make this mistake. Your overworked stomachs were the cause of your discomfort, not the nature of the food. It is unfair to compare our diet with that of the bideen. You have no appetite for grass and raw vegetation; but natural food is the best that nature could provide for our race. The fact that you enjoy it as well as we do, proves that it is adapted to your use as well as our own, provided it is eaten in the proper proportions and in small quantities. At Mt. Despair, your crown prince ate it exclusively and suffered no ill result. Any Selenite can do the same.

"As for its attraction for bacteria, we must admit that Fosog was not mistaken. But we always prepare our food but a short time before it is eaten, and never attempt to preserve it for an entire dirumo (two and three fourths terrestrial days.)

"I am pleased to learn that Fosog intends to give your synthetic food a natural flavor. I will be glad to assist him in any way possible to insure his success. Our own scientists have always been unable to duplicate the work of nature, but the superior ability of Fosog insures an improvement in the taste of your food."

Fosog replied without thanking

Dorothy for her apology. He advised against the experiment of giving a Selenite what he considered a perfect dinner. He said he had found injurious elements in natural food that would shorten the lives of those who ate it. He again promised to give synthetic food a natural flavor and asked them to wait not longer than five dirumos (two weeks) when their diet would have a natural flavor. He declined without thanks Dorothy's offer to help and again expressed renewed confidence in his own ability. He asked for samples of food with which to experiment and Dorothy gladly promised to furnish them. We were released of the charge of attempted murder; Davis was sent back to school, and we were free to do as we pleased.

Even though I had been denied the privilege of an argument with Fosog, I felt certain that there would be all the argument I cared for from our own party. But I was mistaken. Lacey agreed with me that Dorothy did the wrong thing in offering to help Fosog. Winters said it would be a simple matter to make artificial flavors and wondered if Dorothy thought she was speaking the truth when she said our own chemists were unable to imitate natural flavors. If Fosog were successful, there would be no need of commerce with our world and the banquet would have been a total failure. We did not know where Dorothy had gone after we left the Council Chamber, and it was a long time before she joined us.

"Boys, we have started to fight!" she cried as she walked into the room where we were sitting: "The first battle was a complete victory. If we had rehearsed our parts for a year, we could not have done better. It will not be long until you are offered free passage to the earth and I will become the future queen of the moon."

"You have a lot of confidence in yourself. How do you expect to do it?"

"When my father first proposed building the telescope at the Brewster Observatory, he was told that it could not be done. But he did it. I was told that this trip to the moon was impossible, but with your help we did the impossible. We Brewsters have a family tradition. The 'Brewster grit' never fails. It is characteristic of our family never to give up when we once start a task. The 'Brewster grit,' is again aroused! We have started something and the most powerful weapons of the earth are at our disposal. The barriers ahead of us are small in comparison with those we have already crossed. Within a few lunar days, I will be married and you three men will be back home where you will be considered the greatest heroes of all time."

"What do you consider the most powerful weapons of the earth?" I asked.

"Napoleon once said nothing could withstand a resolute determination. Hannibal considered strategic leadership his greatest weapon. Shakespeare said the earth had no force that could withstand a scheming woman. What was it that caused Columbus to lead the first expedition across the Atlantic? It was the human desire for the spices of the Orient. Any one of these forces is enough to insure our success; but we have them all at our command."

"But," Winters objected, "the Supreme Council once made a final decision that we were never to return to the earth. There is no hope that they will remove their decision; they have the reputation of being a very immovable body."

"Yes and the 'Brewster grit' is an irresistible force. An irresistible force is about to collide with an immovable body, and something is sure to happen."

"Did you forget that Fosog is going to make artificial flavors?"

"Do you know where I have been since we left the Council Chambers? I was preparing something for Fosog to imitate. You remember he said he had never tasted natural food and that is the reason he needed samples. I pre-

pared some for his use and sent them to him. These samples consisted of biscuits flavored with castor oil, Worcestershire sauce, condensed milk to which gasoline has been added, and a bar of soap."

THE time arrived when Fosog had promised to give natural flavors to synthetic food. In triumph he carried his product to the Supreme Council. Full of anticipation and expectancy, the Buzerks prepared to make gluttons of themselves again. But their disappointment was plainly shown when they tasted the result of Fosog's experiment. Their confidence in his ability and science was not shattered by the first mistake he had ever made during his long life. He was asked to try again, but each successive experiment was a failure. The Buzerks thought they could not wait until natural food had been produced by synthetic methods. They came to us, one at a time, and asked us to bootleg the forbidden food to them. Dorothy always warned them of the dangers pointed out by Fosog and, in most cases, they replied they had come to the conclusion that the famous scientist was, for once in his long life, a failure. She reluctantly consented to give them the food, provided it was eaten in our presence and not carried away. Without their knowing it, Winters and I secured photographs of these Buzerks breaking the laws they had themselves unanimously passed.

Fosog and his entire department continued their attempts to make good on their promises. Time after time, they called upon us for samples of food; but each sample had been prepared in advance for that particular purpose. After two lunar days, they were ready to acknowledge their failure, for which we expressed regrets as sincere as those of the Supreme Council. Dorothy sent word to the Supreme Council that she believed she could succeed in the experiment in which Fosog had failed. They gave her the opportunity. Fosog and his department prophesied her failure, but she mixed ground spices, such as ginger, cinnamon nutmeg, etc., and liquid flavoring extracts with the ingredients of the cakes and her product was a success. She sent her cakes, of which there were a score of different flavors, to the Supreme Council.

She became famous immediately. The Supreme Council honored her, her friends congratulated her, while Fosog and Company, whose humiliation was complete, wanted to know how she had done it. She explained the use of the spices and flavoring extracts and took particular care to let it be known that these were to be obtained in abundance on Barlenkoz. She saw that samples of her product were given to many of the most influential citizens, before letting them know that her supplies were almost exhausted. She knew that price is governed by supply and demand; so she created an enormous demand before telling them that their was no supply, because the price she was going to demand would be enormous.

Time passed slowly; our business of bootlegging prospered as long as our food lasted. Without knowing it, each guest left not only his name on our register, but undeniable photographic evidence of his breaking of his own laws.

CHAPTER IX

FOR the third time in our lives we were summoned before the Supreme Council. That body had just finished one of the longest and most important sessions on record. We never learned what had happened before we arrived; but we have reasons to believe there had been more arguments and debates at that session than ever before. Fosog had been present and his opinions had been heard (of that we are certain), but it will always remain a mystery to me that they decided to act against his advice. As usual, Zerko Tarkomas was the first to speak. He told us of the

decision made on the great problem that not only concerned us, but all the peoples of two worlds. His speech lasted for over two hours, but I shall try to condense it into as few words as possible:

"Friends from Barlenkoz," he began, "you are again summoned before us to hear our decision on a request made by you a long time ago. You asked for permission to return to your native planet. We realize the danger it brings in letting your warlike hordes know that ours is not a dead world, but one of the most desirable habitations in the entire universe. We realize that we or no other group of men can stand in the way of progress. We realize that, if your recent wave of progress continues for another century, your people will find out for themselves the conditions that now exist on our world. It has been decided that the best thing we can do is to make ourselves known to your people and secure an agreement during the present generation that will safeguard our interests and bring a real benefit to the posterity of both races.

"We are asking you, not permitting you, to return to Barlenkoz and tell your people the conditions as they now exist. We ask you to tell them of the history of your race and ours before they were divided and let them know the bond of relationship that exists between us. Tell them that, in the future, the resources of both worlds may be necessary, as they have been in the past, to repulse the invasions of creatures foreign to both of us, who may attempt to take our worlds from us.

"You may tell them that we desire to create commerce between the two worlds as the first step toward reuniting the two races. The laws which we passed when you first arrived upon Dunel, prohibiting the successful landing of Barlenkozians upon our world, have been replaced by laws more just and humane. We will permit men and women of your world to come here, upon the condition that all such immigration shall be regulated and controlled by the Supreme Council. We must insist that all precautions be taken to prevent your people from bringing Barlenkozian diseases with them. Every person will be required to spend a certain time in quarantine before mingling with our people. The secret for the control of gravity must remain a secret of our world and all space-flyers, as well as all commerce, must be under our control until disease has been banished from your world, as it has been from ours.

"Do you agree to these conditions and promise never to reveal the secret to your people?"

We replied that, in our opinion, each nation and each world is entitled to make its own laws concerning immigration. We agreed to keep the secret for the control of gravity, and do all in our power to make their immigration laws respected by our people. We told them that we believed our government would agree to these fair conditions; but we did not have the authority to make any promises binding our government.

"We feel that you can be trusted," continued the Zerko: "In all your acts and conduct while in our midst, we never knew of your being dishonest or guilty of any act that would deceive any of our people."

I wondered what he would say if he knew of the trick we had played on Fosog, by making his experiment a failure. I began to wish we had not tricked this well-meaning old fellow; but, when I think that if we had not done so, we would probably still be on the moon, I feel that the end justified the means.

"Since there are many languages spoken on your planet, we have decided to conduct all our business with your world through your own nation, the United States of America. We do not want the other nations and peoples of your world to feel offended by this; but the existing conditions of confusing languages makes this necessary at

present. In the years to come, when languages are better understood, negotiations will be opened with all the peoples of Barlenkoz. We feel that your nation will be fair and just with her sister nations and we wish to say here and now, that if they are not, their is another nation of your world that speaks the same language.

"Dunel now faces an important change in internal conditions. Within another year the ancient crown of all the Zerkos will be passed to my son, Baklo. I feel proud when I say the reins of government are passing into capable hands and the crown will rest on a worthy head. During my reign, great changes have taken place for the better among my people; but greater changes have taken place on Barlenkoz. If Baklo reigns as long as I have done, he will direct one of the most important periods in human history. Your nation is in the midst of the most progressive age that ever existed; it is the wish of the Supreme Council that this progress shall continue and nothing shall ever happen to check it or cause a war between the two worlds. Both worlds will profit by the opening of commerce, but your profit will be the greater. All we ask at this time is natural food, to be used in connection with our former diet. Fosog still advises against it; but other members of his department are of the opinion that a little natural food, now and then, will strengthen our digestive organs and be a physical benefit to our race, provided no radical and sudden changes are made in our diet.

"IN return for periodical cargoes of food, we will give you any materials or articles you may ask. We think, however, that our scientific knowledge will be of more benefit to you than anything we have to offer. We cannot give this all at one time; we will have to educate a number of your young men and women and let them return and teach their fellow-countrymen. When you return, you will carry much of our knowledge and science with you. With the few exceptions that we deem necessary, we want you to give this knowledge to your world. Send us a thousand of your young men and women and we will educate them and return them to you, capable of doing much good among your people. We can not send our own teachers to you; for they would not only be encumbered by the strong gravity of your planet, but they would be more susceptible to your diseases and their lives would be endangered.

"Every ship of space that crosses the void between the two worlds will tie us closer together. We will communicate with you from time to time while you are on Barlenkoz, and I am sure that I express the sentiments of all our people when I say I hope you will soon return to us. Even though you are our intellectual inferiors, our people have learned to love you. Your progress in your school work is pointed out to our young people as examples worthy of imitation. In order that you may prolong your lives and make the most of your restored youth, it will be necessary for you to return to us for periodical treatments; so, when you return to your world, we do not consider it a permanent separation."

The approval of the Buzerks was plainly shown by their applause as their Zerko took his seat, but there was one man present, to whom these plans were very displeasing. This man was Fosog, unquestionably the foremost scientist of Dunel. His recent failure had been a great humiliation to him, and his loss of prestige with the Supreme Council had been a terrific blow. His long list of successful achievements had given him a sense of personal importance that was very distasteful to us. But for the first time in his long life, he had suffered defeat. He knew how to win but had never learned how to lose. He held the Barlenkozians responsible for his failure and his hatred was directed toward Miss Brewster, a member of

an inferior race and an inferior sex, who had accomplished a task that he had declared impossible. He knew that this was his golden opportunity for revenge, and was determined to defeat the plans of the Supreme Council, which were such a decided benefit to a hated and inferior race. As he rose to his feet and asked for permission to address the Supreme Council, I formed the opinion that he was a worthy antagonist and hoped the opportunity would offer itself to meet him in mental combat.

"The greatest mistake in human history has just been made," Fosog began: "The Buzerks have not only degraded themselves, but have dropped to the level of the Barlenkozians. I believe there was something about the filthy natural food, that not only has such a disagreeable taste, but unknown qualities, capable of producing such a degenerating influence upon those who eat it. It is responsible for the barbaric and warlike tendencies of the Barlenkozians. Since eating it, the Supreme Council has acquired their objectionable qualities. If all the Selenites eat it, our race and our world are ruined. Dunel is in the greatest danger since Barlenkoz first appeared in our skies; the Supreme Council has become the enemy of the people whom it has sworn to serve and protect. There is but one man who can save our world from this great menace—I am that man. For a thousand years I have unselfishly served my beloved fellow-citizens. It is I who saved the lives of the Supreme Council after they had filled their stomachs with the most terrible foreign material that was ever dignified by the name of food."

I realized that the time had come when Fosog must be answered. If he were permitted to continue, all our work would have been in vain. The Supreme Council would listen to him and withdraw their offer to let us return to the Earth. But Fosog continued:

"The degrading influence of Barlenkozian food is shown by your offer to give the most valuable possessions of our world, scientific knowledge and mechanical achievements, to the Barlenkozians. With new weapons, their barbaric tendencies will be stimulated. In less than a decade, Dunel will be invaded by vast hordes of barbaric Barlenkozians. No one but a fool or a traitor would give weapons to an enemy. The Supreme Council is composed of both! For the sake of the people of Dunel, I demand the immediate destruction of the five Barlenkozians in our midst."

"That old fool has gone far enough!" I said to my companions: "It looks almost as though the Buzerks are going to agree with him. If Zerko Tarkomas does not silence him, I'll do it myself!"

BUT the Zerko made no effort to silence him and Fosog continued: "No one has made a deeper study of Barlenkozian conditions, as revealed by past explorations, than I. From one exploration to another, no scientific progress has been reported. During my career, Barlenkoz has been explored twice and, if Baklo does his duty and explores the menacing world at the beginning of his reign, it will be found that conditions are exactly the same as they were when his father made the last exploration. These Barlenkozians tell us they are civilized, but they forget that we are of a superior race, quite able to use our minds and judge the future by the past. We know their qualities and their limitations. They may act like civilized men, but under the surface they are exactly the same sort of brutal wild men who roamed over their world only a few centuries ago, barbaric and warlike, incapable of donning the garments of civilization."

"These insults shall not go unanswered," I whispered to Dorothy: "For your sake, I have remained silent in the past, but no one can keep me muzzled in the future! Fosog must be answered at all costs!"

"It will not be long now," she replied: "Just wait until he finishes."

"War is glorious to these Barlenkozians," Fosog continued. "This group wants to return and boast of the new world they have discovered. They want to be heroes and will lead an expedition against us. What would be more natural for the woman to boast of how she corrupted our world by giving us that terrible food? She knows she will receive more hero-worship than any other woman of her race. She will—"

Baklo had risen to his feet and raised his hand in protest. This was an indication that the speech of Fosog was at an end: "The insults uttered by Fosog are a disgrace not only to his department, but to the Supreme Council as well. They must cease entirely. If he has anything worth while to say, he may continue; but we are not here to hear him insult a woman.'

"You are just the person to say that!" Fosog retorted: "Your immoral love affair with this barbarian woman is not the secret you think it is. If you could have your way, you would share the throne of Dunel with her. You have been plotting together against the Supreme Council! You proposed the banquet at her request in order to corrupt the Buzerks and defeat their purposes for your own selfish interests! You are——"

Dorothy was crying! Lacey and Winters were ready to fight and I was preparing to tell Fosog something that he had never suspected. Fosog was ignoring Baklo's gestures for silence, when Zerko Tarkomas intervened and succeeded in silencing him.

"It is pitiful," said the Zerko, "that Fosog behaves like a madman. If he proves unable to act like a sane person, it shall be my duty to remove him from office and submit him to an examination to see if he is suffering from the insanity of old age.

"I want to apologize to Miss Brewster for Fosog's conduct. I am certain no one believes her guilty of immoral conduct of any kind, as charged by Fosog. As for her desire to return to her native world, we consider that only natural, and are certain it is not for the purposes mentioned by Fosog."

"But I have no desire to return to Barlenkoz. My interests are all here on Dunel. As long as Dunel continues to revolve around Barlenkoz, I hope to remain here."

She had made a mistake in saying anything about their world revolving around ours. No Selenite likes to have his world belittled in that manner; the entire Supreme Council appeared to be angry. Fosog saw an opportunity to make use of her mistake:

"I want it distinctly understood among you Barlenkozians that Dunel does not revolve around Barlenkoz, but the two worlds revolve around their common center of gravity. Here is added proof of the ignorance and conceit of the Barlenkozians."

"As I was saying," Dorothy continued, "as long as Dunel continues to revolve around Barlenkoz——"

"But Dunel does not revolve around your big Barlenkoz and never did!" the enraged scientist shouted. "Do you not know the meaning of 'Center of Gravity?' "

"Dunel revolves around Barlenkoz and has continued to do so once every dirdir since the destruction. Fosog may have an influence with the Supreme Council, but he is unable to interfere with the laws of Nature. Do not worry about my ignorance about the meaning of 'Center of Gravity'. Check up on your own ignorance as to the location of this center of gravity. You know the weight of Dunel, the weight of Barlenkoz and their distance from center to center. Use your science, a few figures will teach you something that the distinguished Fosog never knew."

I never saw such a mad scramble for pencils and paper. Each Buzerk wanted to be the first to arrive at the truth. Though I knew Miss Brewster's statement to be true, the exact figures had escaped me. I made a hasty calculation and estimated the center of

gravity was located at a point less than three thousand miles from the center of the earth and the radius of the earth is four thousand miles. While the moon, does not revolve around the exact center of the earth, she revolves around the earth nevertheless.

"Solar Heat!!" exclaimed Tarkomas, when the truth dawned upon him. "The girl is right and for thousands of years we never thought of it. I do not believe our scientists degenerated so far as to never check this thing. Why have they never made this public? Generations have lived and died without knowing this! Judging by the emphasis placed upon the center of gravity, I always thought it was located about half way between the two worlds and they revolved around each other. Fosog must beg Dorothy's pardon for saying her race is inferior to his."

As Shakespeare would have said, this was "The most unkindest cut of all." Fosog had no choice in the matter; he obeyed his Zerko, but his humiliation was complete. Silence now reigned supreme as Dorothy handed me a piece of paper, upon which an important message was written in English:

"Consider the muzzle removed. Borrow all the thunder of Jove and let your conscience be your guide."

CHAPTER X

I LOST no time in rising to my feet and asking for permission to address the Supreme Council and answer some of the charges of Fosog. They must have been expecting action of this sort, as there was not a dissenting voice as my request was granted by Zerko Tarkomas.

"My friends," I began, "since our arrival upon your world, we have always been spoken of as members of an inferior race. The time has come when you must realize that educated Barlenkozians do not acknowledge the supremacy of any other race. Our lives and our entire resources have always been pledged to upholding our honor and rather than acknowledge any other race or any other world as our superiors, we would gladly perish. No effort has been spared to let us know how we are rated in your estimation. You have shown us our world as you have seen it. I hope to do the same for you and let you see Dunel as we see it.

"We thank your Zerko for his kind offers to educate our people and raise us up to your own level. In return we will assist you in trying to become our equals. We know that your intentions were good; we hope you can say the same of us when I have finished."

I now held the undivided attention of the entire Supreme Council. They had no idea of what was coming. When Dorothy spoke of my love for a mental combat, the last time we appeared before the Supreme Council, she had paved the way for this occasion. Things were going our way and we knew it; every time I noticed an expression of fear, I used heavier artillery and more direct forceful arguments.

"Why is the Supreme Council not honest to admit that their sudden desire to educate our race is due to fear of a race superior to their own? Why not admit that you fear the scientific secrets you are offering us, will be discovered by our own scientists during your own lifetime? You know that we have made more progress during the past five hundred years than any other nation or race has made during any thousand years of human history. Five hundred years ago, Zerko Tarkomas saw our people living in miserable hovels. Today you see the posterity of the same people, who have solved a problem that baffled you for ages, the problem of interplanetary travel. You know that our rate of progress is so great that you momentarily expect to find Dunel covered with gravity-controlled space-flyers from our world. In order to act before they make this discovery themselves

and make them think the secret is so baffling, you try to tell them that they are not yet civilized enough to have such dangerous things in their possession.

"You know the character of our race and their ability as fighters. Fosog says we are barbarians. We are proud of the fact that we are not cowards like the people of Dunel. You boast of the forces that influenced the evolution of your race and produced a race of semi-scientists and weaklings. You know the evolution of our people from the same common ancestors. In the past ages you have seen the conditions and influences that have made us a race of fighters, while your own ancestors were living lives of ease, splendor and idleness.

"Your expeditions to our world before the dawn of our history have recorded the struggles of our fathers, fighting for an existence on a world not adapted to their race. You have seen the heroic struggle against a superior force of gravity, and when your own people were unable to stand on their feet, our children were walking at less than one year of age, which is more than can be said of Selenite children, in their own native world. You have seen the extinction of the saber-toothed tiger, before the fearless advances of our fighting ancestors. You have seen a struggle for existence in a world where only the strongest and fittest could survive and live to propagate the race. In selecting her breeding stock, Nature was more severe and selected sterner stuff than any of your scientists. Our weaklings died in their infancy and our cowards never lived to reproduce their kind. What is the result? On Barlenkoz, not on Dunel, lives the race of supermen!

"Our ancestors fought against the superior brawn of Barlenkozian animals and were victorious because of their superior intellect. You know the kind of training that had to develop their minds. The intellect of our race did not perish with the civilization of the blacks, which was destroyed by your own cowardly race because you feared them. As our people rose up from savagery, they received a training that has been denied you. Nature has trained our people and produced a race superior to your own, which is the product of human science. Humanity can not equal the products of Nature, which was demonstrated when Fosog attempted to give synthetic food the flavors of nature.

"When Fosog attacked us a short time ago, I thought he would be a worthy antagonist. He has the reputation of being your greatest scientist and a man who had never been defeated in mental combat. He proved to be unworthy of consideration. He offered nothing but insults, without any sign of reason or proofs. I was disappointed in his entire speech; I had hoped he would give us something to answer. But he defeated his own purpose with his unreasonable insults. He did not win a single Buzerk to his side. He is said to be your most able talker and fighter, against whom no Selenite can argue. I consider him a big bluff, who would have no chance against a Barlenkozian.

"HE told you we were his inferiors, but failed to mention anything in which his race was superior to us. Your young men and women require fifty years to complete their education, before they are considered citizens and capable to begin life as an apprentice. Handicapped by a lack of knowledge regarding your language, we Barlenkozians completed the Selenite course of instruction in seven years. Our companion, George Davis, had never completed the Barlenkozian education and was not considered a well-educated person at home, but he is doing far better than his Selenite companions. We are educated in the arts and science of both worlds and are able to compare them, since we know both. We will say that you have many scientific facts of which our people are ignorant, but you are entirely lacking in

the ability to make use of them and produce new inventions. Your thousands of years of civilization are almost lacking in progress. Pleasure has been the main purpose of your existence and your race has long ago reached the point of stagnation. Your cycles of history tell your story, your periods of progress are short compared to your periods of pleasure seeking, boredom and indifference. Your ancestors made life easy for you and you have done nothing but enjoy it; instead of advancing, your race has gone backward. Stagnation has followed your progress and retrogression has followed stagnation. Your population of today is a disgrace to your ancestors of the first thousand years following the Destruction.

"Compare these conditions with those of Barlenkoz. Physical development was necessary immediately after the Destruction. Scientific knowledge was sacrificed for something more necessary at that time; but, at a later period when the slaves of the black Barlenkozians were rebuilding the lost civilization, your own cowardly people destroyed that civilization and left the few survivors with nothing but their physical strength and keen wits to cope with the dangers of their world. You know the story. It does not need repeating; but today our present generation is the heir of ages of physical development and a slow but certain process of intellectual progress. We are advancing while you have been going backward for ages. The facts are before you; answer for yourselves: Which is the superior race?

"We will comply with your request to return to our world and send you food. Our nation has never yet refused to send food to starving people of a less fortunate race. You offer us all the gold and rare metals we desire. We desire none! Keep your gold, your copper and your silver. Keep your radium. It is true our supply is limited, but you have no more than you need and are unable to produce more. We do not care to take advantage of you. But we will accept a quantity of another metal that is so common that transmutation is not necessary to produce it—platinum. We can take it without injury to you and we appreciate it just as well; but we ask only enough to exchange for the food we intend to send you until we return to Dunel.

"We will tell your history to our people. We will describe your conditions as you requested. We will go before our own Supreme Council and talk in your behalf. We will do all in our power to have your immigration laws respected and obeyed by our people. We will give none of your inventions to our people against your will. We will give them only the scientific principles you desire them to have; but you must not hold us responsible if they have already made these discoveries during our absence. Ten years is a long time, considering the short lives of our people; and many new discoveries and inventions are produced each year. I doubt if they will welcome and appreciate new inventions from your world. They are living in an age of progress and have much to work for. These are the conditions that produce real happiness and that is preferred to an age of pleasure-seeking.

"We will send you any amount of food you desire; but please remember that the President of the United States and his own Supreme Councils, who express the wishes and desires of the citizens, will regulate the future commerce between the two worlds. They will decide what you will send us in the future.

"You may banish your fears of Barlenkozian microbes. We know all your methods of fighting germs and do not consider them much more effective than those used by our own people. The only difference lies in the fact that you have the results of thousands of years of effort, while the task, which is infinitely greater on our world, is only started. We will

see to it personally that all food supplies sent you are treated for the extermination of all kinds of bacteria before they leave our world. If you will use your usual precautions upon their arrival, there will be no danger.

"But before we do any of these things, there is one thing you must do. Some time ago your Crown Prince Baklo asked the Supreme Council to approve of his marriage to Dorothy Brewster. His request was denied because you considered it unwise to mix the blood of an inferior race with your royal family. Have I not proven that race is superior to your own in every way? Do you not see the absurdity of your attitude? Do you not consider it the best thing that could happen to your royal family, to mix its blood with that of a superior race? Do you think you can keep this splendid couple apart forever? She crossed a barrier that we believed had never before been crossed, to rescue him and restore him to you. She crossed a greater barrier than that when she demonstrated the fact that she was superior to any woman or man of your race. If any other barriers stand in her way, she has the ability to break them down.

"THE accomplishments of her family are greater than those of the Royal Family of Dunel, even if we compare an equal number of generations and give you the benefit of ten times as many centuries. Her forefathers were among the earliest pioneers of her country. They helped to make our nation possible; they fought the red men whom you admired. Your admiration was, no doubt, caused by the fact that they, like yourselves, had reached a point of stagnation where no further development and progress was possible.

"For centuries the Brewsters have been one of the greatest families of our country. No war has failed to find them among the leaders and no time of peace has failed to find them the foremost citizens. For generations, they were leaders and educators in the greatest colleges and institutions of learning in our world. By the sheer ability of leadership and shrewd management, her grandfather accumulated one of the largest fortunes of the country. With the aid of this vast fortune, the inventive genius of her father and the characteristic perseverance of her family, the Brewster Observatory was built, which makes it possible to see everything that happens on the side of your world turned toward ours. Her father accomplished something your greatest scientists have failed to do during the past thirty-five thousand years. She saw Baklo marooned on the desert surface of one of your ancient seas. Four years later she had organized an expedition, built our first space-flyer, crude as it was, and crossed the void between the worlds. You laughed at her *Astronaut* because you had superior gravity-controlled space-flyers, copied from a race superior to your own, the black Vuduites. But, within the same length of time, have you had a woman or man within the past thirty thousand years who was capable of constructing a new type of space-flyer doing the same thing?

"No woman of your world has ever equaled her record as a student and no man has ever surpassed her. Her instructors have failed in all attempts to baffle her. She produced synthetic food with a natural flavor after Fosog had failed. Just now she has pointed out an error in the teachings of thousands of generations of your scientists. Do you still say she is unworthy to share the crown of the Zerkos with Baklo? What more do you require? The Supreme Council once selected a wife for Baklo, and what was the result? Let Baklo do his own selecting this time and you will have as your future queen and the mother of future Zerkos, Mother Earth's Fairest Daughter.

"You can not refuse to sanction his marriage to the woman of his choice;

but I have a request to make. There must be no restrictions placed on the number of their children. They must be permitted to have as many as they desire. I am not asking you to approve of the marriage, I know you will be glad to do it of your own free will. But, if you refuse to comply with my request, I shall have a very painful duty to perform. I shall inform the Zerko that one of his Buzerks is guilty of breaking one of the laws he helped to pass. Recently he came to us and asked for Barlenkozian food. He ate it and suffered no ill effects; but we have a photograph taken while he was eating it, which he can not deny. If I find that my request has been granted, this picture shall be destroyed and the honor of the Buzerks shall not be questioned. If my request is denied, then the citizens of a certain community shall see the sort of man they have chosen to represent them. They will not approve of a man who passes laws he breaks himself.

"We will now leave the Council Chamber and let you discuss the matter in privacy, but we will remain near the door so you may call us when you have reached a decision."

Baklo left the Council Chamber with us while the matter was being discussed. Just outside the door, he slapped me on the back and said:

"Dr. Haverfield! I am amazed! That was the greatest speech ever made in all our history! You have changed their opinion of you and your world completely. You will never again be spoken of as belonging to an inferior race. You proved yourself superior to any of them. Barlenkoz is now a bigger menace than ever, but their appetites will make them overlook that. But who was the Buzerk who ate the forbidden food?"

"We have eight hundred and twenty-seven photographs, showing the same number of Buzerks engaged in that form of amusement."

"I am amazed; You actually—er—what do you call it?—er—shot up the town. That is what they say on Barlenkoz, isn't it?"

"Dr. Haverfield!" Dorothy interrupted: "I was never so mortified in all my life! I never expected you to go to such extremes!"

"What's the matter now. I never thought you would object to my suggesting that the Supreme Council sanction your marriage."

"That's not it. That was humiliating enough; but imagine how I felt when you demanded that they remove all birth-control regulations in my case!"

"Dorothy, let me tell you something. When I objected to your bringing all that food with us in the Astronaut, you told me that the day would come when I would be thankful for those extra barrels of corned beef. It is now my turn to tell you that the day will come when you will thank me for making these demands."

CHAPTER XI

WE had been waiting but a few minutes when we were surprised by the unexpected arrival of George Davis.

"What's it all about?" he asked in English: "Everyone is talking about the Supreme Council sending you home to get more food. The old banquet must have been a success after all!"

"We do not know yet," Lacey replied: "We think they are going to send us home, they did say something about it. Are you ready to go along?"

"Not on your life! I am going to finish school before I go back. I've just about decided not to go at all, if you can get along without me."

"Why not?"

"Well you see it is like this: There is a certain young lady who wants me to stay here."

"Oh I see! You are in love with one of these pretty Selenite maidens.

"That's it exactly. Wait until you see her; she is the prettiest and the smartest girl you ever saw."

"You mean with the exception of Miss Brewster," I added.

"No, Miss Brewster never liked me and this girl does. That's the reason she is smarter than Miss Brewster."

"Did you hear that Dorothy is about to be married to Baklo?"

"Don't kid me! The Supreme Council would never hear of it."

At that moment the door opened and a smiling Buzerk came out: "The Zerko would like to know if Miss Brewster and Prince Zaklo desire an immediate wedding."

"We are ready," Baklo answered, "just as soon as my mother can be called."

"Your mother is here. Zerko Tarkomas sent for her as soon as you left the Council Chambers. That was the cause of the delay."

The wedding took place in the presence of the entire Supreme Council, Zerko Tarkomas officiating. The ceremony was shorter and differed somewhat from the Christian ceremony but, as I am not writing a love story, I will not describe it.

After the ceremony and congratulations, Dorothy announced her desire for the Christian ceremony. Baklo agreed to this, provided the Selenite language was used instead of English, which he did not understand very well. As captain of the *Astronaut,* I performed the ceremony. It was the closest personal experience I had ever had with matrimony, and it was necessary to read the ceremony from a little book Dorothy had brought from home for that very purpose.

When George Davis congratulated the royal couple, he asked Dorothy if she had brought any rice along. "No wedding is legal without it," he added.

"I did have some rice, but it was all used at the banquet. I forgot to save any for the ceremony."

"Well I hope you get some more before my wedding takes place. I wonder if you would let me have that little book. You do not need it any more."

"Certainly you may have it, but I hope you do not have to carry it around with you as long as I did. It will be worn out if you do."

"Where are you going for your honeymoon?" Winters asked.

"That's right! No wedding is complete without a visit to Niagara Falls. I shall speak to my husband about it."

The Supreme Council was anxious that we start home as soon as possible, because they were impatient to receive the first cargo of food supplies from our planet. Two spheres were made ready for the voyage as quickly as possible. One of these spheres was made invisible; for it was to be used by the newlyweds on their honeymoon visit to Niagara falls and other points of interest in our world, and they did not care to attract any attention.

Dorothy and Davis made out a list of food supplies to be sent to them, while the remainder of our party made the final preparations for our departure. Davis insisted that a few cook-books be included in the shipment; as it would be his work to translate them into the language of the Selenites and teach them how to cook and prepare the food. Dorothy thought it would be best to send nothing but canned goods; but, since so much depends upon the quality and the satisfaction produced by the first shipment, Davis assumed the responsibility of seeing that everything was prepared properly.

I had a lengthy conference with Zerko Tarkomas and Prince Baklo, in which plans were worked out for the establishment of commerce between the two worlds. If our government sees fit to indorse these plans, as they were submitted upon our arrival, they will prove a positive benefit to all concerned. The Selenites are not trying to take advantage of us in any way; and I have promised to do all within my power to see that their interests are protected and that nothing happens to give the citizens of either world a chance to complain. As yet,

I do not know just how the plans will appeal to our people. There is a great task ahead of me which will begin just as soon as I go to Washington next week, as an ambassador from the Moon. If "Farm Relief" is still a problem remaining unsolved, I think it will soon be settled to the satisfaction of all concerned.

AT last the time arrived when our return journey was started. Davis gave me a bulky manuscript to be given to his former employers, The Universal News Syndicate, telling of our voyage to the moon. This has already been published in the papers owned and served by that syndicate. He gave me also a bundle of personal letters to his friends, and asked me to inform his employers that he would return within a few years and write the conclusion of his story. Just to satisfy the publishers and the public until that time, he asked me to write an account of our personal adventures and give a description of conditions on that world. You are now reading the resulting story; and I have omitted enough to make a hundred stories as lengthy and as interesting as mine.

While we were talking, Zerko Tarkomas arrived and called Davis aside. They held a private consultation for a few moments, after which Davis called to me:

"Can you add an extra barrel of corned beef to that order for the Zerko?"

"If you will assume all the responsibility, and show him how to cook it, I will do so and include a crate of cabbage."

"I like it, too. We will have a private banquet of our own, and I will not let him eat too much."

I shall not burden my readers with a description of our return trip. The two spheres started together and the invisible sphere remained near us until we reached Niagara Falls. I'd like to describe our emotions when we first entered the atmosphere of our world, but that is impossible. Emotion such as this, must be experienced to be appreciated and understood.

The newspapers have already told you of the enthusiastic welcome that greeted the "Astronauts" as they visited the principal cities of the nation in the sphere in which we returned. You already know of the six tons of platinum, deposited in Washington. I wish I could describe the amazement of the Selenites when they first saw the Atlantic Ocean at close range, or when they received their first glimpse of the falls of Niagara. The Rocky Mountains and the Grand Canyon did not impress them very much; but, when they saw the orange groves and fruit farms of California, the effect of terrestrial gravity was all that prevented them from leaving the sphere and attempting to secure the natural food.

The effects of the superior force of gravity on the Selenites need no description. The Selenites of today are no stronger than they were in ages past; they are compelled to remain in their seats while near our world. We found that our absence of ten years had weakened us considerably. We are still more able to move than our companions, but it always seems that we are carrying an enormous burden. When I address the authorities in Washington next week, I fear it will be necessary to do so sitting down; for standing on my feet is a very wearisome task.

Our strange voyage is ended, but our work in establishing conditions favorable to the commerce between the worlds is only started. A greater task than this is the establishment of the advantages of Selenite science and inventions among our people. But, in this, Lacey and Winters have already taken the lead. If our government favors the idea, I will seek to get in touch with one thousand of the finest young college men and women in the country, who are willing to be sent to the moon for a course of instruc-

tion such as we have just completed. This manuscript will give these young people an idea of the adventures they can expect. Our achievements and reputation have given these wonderful people a high regard for our race, which we cannot afford to jeopardize. No one will be selected as a student in this group unless I, personally, feel satisfied that he or she will uphold the good impression we have tried to give them. No one will be considered whom I do not feel to be attracted more by the opportunity to be of real service to both worlds than by hopes of personal gain. At all costs, this newly-discovered world must be protected against unscrupulous profiteers, who may try to exploit the Selenites and take a personal advantage of their desire for and ignorance of natural food, or their abundance of metals or other products rare and valuable on our own world. No reward in money is offered to the prospective students, who will be the only persons taken to the moon for some time; nor is there any expense connected with the trip. But the extra years added to life, and the opportunity to aid in the noblest and greatest task of all time is a reward, the equal of which was never offered before. Anyone interested in the enterprise may communicate with me at Belmont University, and arrangements will be made for an investigation and personal interview.

I CAN not close this narrative without mentioning a conversation I had today with Princess Dorothy and Prince Baklo, through a small radio set with which I can communicate with the invisible honeymoon sphere when it is within a radius of a few hundred miles.

Prince Baklo is greatly impressed with his visit to our world and hopes to return in the near future to begin his personal exploration. But at present he and his bride are anxious to return home; for the cargo of natural food may cause more work and trouble than Davis can handle alone. The princess thinks it would be unfortunate if the Supreme Council should eat too much, and have to send for Fosog again.

"Yes, that is one thing we overlooked. You had better hurry back before it is too late. Have you any message to your old friends?"

"I suppose you are telling them that I am still alive, well and happy.

"I am; but have you any personal message to any of your relatives?"

"I have no relatives except my foster mother. You may tell her that she can not laugh at me any more; I've made good on my promise."

"What do you mean by that?"

"When I was only four years old, I cried for the moon and wanted to haul it in my little red wagon. I told her that the moon is not out of reach if one had the grit to go after it, and that some day I would get it—"

"—and haul it in your little red wagon?" I asked.

"Perhaps."

"Well, be careful, and don't break it. It was too hard to get."

I am now ready to lay down my pen and bring this manuscript to a close. But years must pass before the entire story is told. I am looking forward with the enthusiasm of youth to the greater task just ahead. When that task is finished and the day arrives when the inhabitants of two worlds see the fulfillment of the poet of a century ago, when

"—the heavens fill with commerce,
argosies of magic sails,
Pilots of the purple twilight, dropping down with costly bales;
When the war drums throb no longer and the battle flags are furl'd
In the Parliament of Man, the Federation of the World."

When that vision becomes a reality, I can then lay down my pen and at the close of the most beautiful and amazing story of all, write

THE END

He swept in wide circles about the ship.

Space-Ship Derby

By MILTON KALETSKY

A professional rocket-racer has a pretty tough job, particularly if he enters the Race Around the Sun! And if some fool racer, like Jim Holt, should approach the sun too closely—his worries are over!

IN a long straight line between the Earth and the Moon floated the lean, gleaming rocket ships waiting for the start of the Seventh Annual Circumsolar Race. Forty-eight of the fifty-one entries were already in position, and in the great underground hangars on the Moon the

other three were receiving last minute attention from the mechanics.

On the rollers by the airlock of Hangar 6 was the *Comet,* mechanics swarming over its two hundred foot length. Nearby lounged a tall, athletic young man, his pleasant face twisted slightly in anxiety, his strong fingers twining impatiently in tumbled black hair as he watched the final preparations of his ship. This was one race he must not lose. For him there was much more at stake than the hundred thousand dollars offered as first prize by the fuel company which sponsored these annual circumsolar races.

A soft feminine voice broke in on his thoughts. "How goes it, Jim?"

The frowns on Jim Holt's face fled before a smile, as he recognized the trim slender girl. "Hullo, Lee," he replied, glancing approvingly over the youthful curves revealed by her snug pilot's costume. "All set. I'll be pulling out in a few minutes. Say, Lee, before I go, I, uh, . . . well . . . that is . . . "

"Oho! Another proposal!" Lee Edwards' bright brown eyes sparkled. "The noble knight wants his lady to promise to be true while he goes adventuring."

"That's the idea!"

"Don't you ever get tired of hearing me say no?" Her teasing smile faded when she saw Jim wasn't listening but was glaring over her shoulder. Turning, she saw another young man swaggering by while mechanics and cameramen made way deferentially. Temporarily he was their god, —the winner of last year's circumsolar race. Mounting into the *Meteor,* he smiled confidently into the television cameras.

"Going to win again, Mr. Carter?" he was asked.

"Of course. Is there any competition worth mentioning?" snapped Carter. From the *Meteor's* entrance port, he surveyed the hangar. Noticing Lee, he grinned and called, "Hi, Babe, drop that punk and I'll treat you to a real party after I walk off with this kids' contest!"

Laughing loudly, he disappeared into his racer.

As Jim flushed angrily, Lee put a restraining hand on his arm. Under her fingers she felt the hard muscles contract.

"That guy," muttered Jim. "I'd have won last year if he hadn't rammed me from behind and smashed my fuel tanks. Of all the dirty—"

"Quiet! There's a lady present!" smiled Lee.

"Oh yes. That reminds me. Now about my proposal—"

"Ready, Mr. Holt," shouted the mechanics.

"Damn! Quick, Lee, what's your answer?"

"All I'll say now is good luck." Getting up on tip-toe, she kissed Jim swiftly and walked away.

He grinned in delighted surprise. "Hey," he called after her, "will you be here to greet the conquering hero when he returns?"

Without looking back, she shook her head negatively.

PUZZLED, Jim leaped into the *Comet* and shut the double door of the airlock. "Easier to figure out a trajectory by calculus of variations than to figure out a woman's mind," he thought, then gave his attention to the huge control board. Under his ship, the rollers revolved, the inner door of the hangar airlock opened and the *Comet* slid through. In a few moments, the second door opened and the vessel rolled out onto the surface of the Moon. As Jim touched a button, the heavily loaded racer rose, aiming for its assigned position in the row of rocket ships, lined up a thousand miles apart. Behind him, Ralph Carter's *Meteor* was just emerging from the airlock while from the adjacent hangar came the last ship, the *Slopoke.*

Taking his place, Jim glanced over the list of pilots entered in the race

He knew most, but the *Slopoke's* pilot's name was missing. Flipping a button, he radioed to Bill Ware in the *Zebra*.

When Bill's tense face appeared on the televisor screen, Jim asked, "Who's in the *Slopoke?*"

"Dunno. Last minute entry," said Bill. "Let's hope it lives up to its name."

"Huh, what's in a name?" laughed Jim. "Ralph Carter by any other name would smell the same."

Bill's chuckle was cut short by the announcer's voice coming in on all wavelengths. "Attention, everyone! It is now eleven fifty-five A. M. Greenwich Mean Time. At noon precisely, the race will begin. Ladies and gentlemen, these Annual Circumsolar Races are sponsored by the Solar System Fuel Company, refiners of that famous Zippy Rocket Fuel. Next time you need fuel, stop at any one of the 300,000 S. S. fuel stations on the Earth, Mars, Venus, Luna and all the larger asteroids for a tankful of high-grade, quick-starting Zippy Rocket Fuel, guaranteed no-knock! . . .

"Now attention, pilots! The course is from here, around the Sun on the far side, and back to this position. When you return, you must pass through the circle formed by the judges' ships stationed here. That is all. Ready! It is eleven fifty-nine and a quarter . . . listen for the tone signal . . . and a half . . . listen for the tone signal . . . and three quarters . . . listen for the signal . . . *Go!*"

On Earth, Mars and Venus, in millions of homes and theatres, people heard the high sharp whine and saw the long line of ships shoot forward as jets of flaming gas spurted from their rocket motors. Jim flipped the acceleration lever up to 3 g's—three times gravity, 96 feet per second per second—an acceleration that tripled his weight and pressed him heavily against the cushioned pilot's chair. But Jim was used to such pressures and calmly set his course, locked the control board, stretched his long muscular legs and relaxed.

His mind turned to Lee Edwards. He wasn't in this race for glory and hardly for money. But the reputation he'd make by winning would get him a pilot's berth on an interplanetary liner. Then he hoped Lee would give a happier answer to his hesitant question. He could hardly expect her to marry a guy who spent every cent on his racer. . . . His thoughts faded into sleep, and the *Comet* went hurtling through space controlled only by the mechanical brain in the control panel and the senseless obstinacy of the gyroscope.

When Jim awoke, the wall chronometer showed eight hours had passed. Moving slowly and heavily, he darkened the cabin to use the small telescope mounted in the conning tower. As he'd expected, Carter's *Meteor* was already up front and slowly drawing further ahead. Running alongside him were the twin ships of the Kung brothers, famous aces from the great Chinese colony on Venus. Between Jim and the three leaders were Bill Ware's striped *Zebra* and another racer carrying the emblem of the Amar Republic of Mars. The *Comet* was sixth and close behind was the *Slopoke*, its seventh-place position showing its name didn't fit. Off to the rear, the remaining vessels were scattered in a long irregular line.

Mental calculation told Jim his speed was about 520 miles per second, increasing more than one mile per second each minute. Next he found the distance of the leaders by sending out a radio beam and measuring the time required for the beam to reach the ships ahead and be reflected back to him. The beam's velocity being 186,264 miles per second, and the time of the round trip being ten and eight-tenths seconds, the pacemakers were over a million miles in the lead. Jim himself had already covered more than eight million miles. "Not

enough," he decided, and advanced the acceleraton lever to four g's.

For the hundredth time, he opened the notebook in which his complete course was charted. On the accuracy of these figures depended not only the race but his life also, for he was going to try something no one had ever dared before.

Instead of passing around the sun at a distance of twenty-five to thirty million miles with the other pilots, he intended to cut in about ten million miles closer. This would shorten his course about thirty million miles and ought to mean victory—if the sun's fierce heat didn't burn him to a crisp first.

Around The Sun!

ALL the pilots were going to roast, for thirty million miles from the sun, its rays were nine times as strong as on Earth, three times further away, according to the inverse square law. And on Jim, passing ten million miles closer than the others, the sun would pour twenty times as much heat.

As a protection, all the ships were polished to shiny brightness outside, so as to reflect most of the heat that fell on them and absorb very little. Even so, Jim's figures showed that the temperature would rise to 181 degrees Fahrenheit and would stay there until his ship drew away from the sun.

He wondered whether he could survive many hours at that temperature. People lived in temperatures of 140° in Africa and the Chinese used to bathe in tubs over fires, but 181° was only 31° under the boiling point of water at one atmosphere pressure.

Well, nothing to do but try and see, he thought, and dug into the larder for a hasty meal. Settling himself in the pilot's chair, he threw the lever up to four and a half g's. He was now in eighth place, the *Slopoke* and another having come from behind to pass him.

The fleet tore on through the void, faster and faster, their mad flight hastened not only by the push of their rockets, but by the mighty pull of the sun's enormous mass in addition. Watchful pilots soon noticed that the *Comet* was gradually drifting out of line. Bill Ware's curiosity led him to call Jim.

"What's up, Holt?" he asked, when Jim's face appeared on the televisor. "You're heading off the course."

"Off yours, maybe," said Jim, "not off mine."

Bill understood. "But you can't approach too close," he objected. "You'll fry like a hot dog on a griddle."

Jim grinned. "Perhaps, but a hundred thousand bucks will buy a lot of cold beers to cool me off. I'll buy a whole lake of beer and swim in it!"

"Huh," snorted Bill, "the heat's got you already!" The screen went dark as he cut off, then lighted again under a new call. Jim stared in amazement. "Lee!"

"Jim," she said anxiously, "where are you going?"

"But where are *you?*" he ejaculated. "I left you on the moon."

"I'm about a million miles ahead of you. As usual," she added slyly.

"In the *Slopoke?* Where'd you get the ship? Why didn't you tell me? Say, this is no race for a woman!"

"Taking all that in order," she smiled, "my answers are yes, bought it, wanted to surprise you, and don't be silly. Now, young man, it's your turn to answer. Where are you going?"

"I've got a date with a pile of money about three days from now and I'm taking the shortest route there."

"How close?"

"Eighteen times ten to the sixth power miles."

"Eighteen million! You'll burn up!"

"I'll be more burned up if I don't win. I'm flat broke, young lady, flatter than a geometrical plane. So long, Toots, I'll be waiting for you at the finish."

AS they approached the orbit of Mercury, the racers began to jockey for position. First one, then another spurted ahead trying to get a clear inside lane for the turn. Occasionally, the jostling and swerving grew into an open battle as pilots lost their tempers and tried to disable each other. In these races without rules, everything was permitted, and more than one pilot would not return home.

Although there were only fifty-one ships in all the vastness of interplanetery space, the high speeds at which they were travelling and the fact that they all clung to the plane of the earth's orbit greatly reduced the space in which they could manoeuver. Already two had collided and were out of the race, limping slowly back to a rocket port on Venus.

Up front, the Kung brothers and Carter were weaving about, trying to force each other away from the sun. Carter was at a disadvantage, having to deal with two ships, but he hadn't yet tried any of his tricks. While Jim watched through his telescope, the *Meteor* swung between the Kungs' ships and aimed directly at the outer one. Kung veered sharply, while his brother spiraled over to help. Instantly Carter whirled away in a great arc until he was between the Kungs and the sun. Then, hidden in the sun's glare, he swooped straight at both.

A moment before he reached them, they sighted him and whirled apart. Without slackening speed, Carter swung between them again to repeat his attack. This time the Kungs flashed around in opposite directions, with Carter hanging on one's tail, trying to ram his fuel tanks. Suddenly Jim was sick with horror. Before he could move, though there was nothing he could do, the twin vessels were streaking directly at each other. Desperately, they tried to turn, but at their high speeds they couldn't completely avoid each other, struck glancingly, and went spinning apart. An instant later the sun's brilliance was momentarily rivaled by a huge, soundless flash as one of the Kungs exploded into fragments. The other, uncontrolled, was swept swiftly sunward by the overpowering gravitational pull.

Carter straightened out and dashed away, free of all competition now, the nearest ship being three million miles behind.

Recovering from his horror, Jim altered his course to intercept the falling racer. Two other pilots, who had also abandoned the race to try to save Kung, turned back when they saw Jim would reach him first.

With his acceleration pushed up to five times earth gravity, Jim could scarcely breathe, his chest seeming to be crushed under tons of weight. To keep his grip on the controls, he had strapped his arms to the board, for if he ever lost his hold, he might not be able to push his hands forward again.

Perspiration ran down his cheeks. A glance at the thermometer showed it was 110° and slowly rising. The air grew hotter and damper, and the stars outside began to waver. With a mighty effort, Jim bent his head and sucked some water from the tank in the control panel. The stars stopped wavering, but the temperature went on mounting—126° . . . 127° . . . 128° . . .

Off to the side grew the solar disc. Jim mentally calculated his speed and the figure disturbed him. Would he ever be able to pull away, burdened with another ship, when he was shooting sunward at more than 3000 miles a second? If he did pull away, he wouldn't have enough fuel for the return journey to Earth!

It was all over then. He'd lost another race and all that depended on winning. But Kung had to be saved, if it were possible.

Sagging in the chair, Jim gloomily watched the thermometer needle crawl over the dial—137° and still rising. He must be within twenty-

Slopoke. His suspicions deepened. When he discovered the half-finished repairs, he was sure he knew what had happened.

Using the reaction gun, he swept in wide circles about the ship. A faint flash of light caught his eye. Speeding over, he found a metal wrench floating in space. At once he dashed back to his vessel and darted off along the straight line determined by Lee's ship and the wrench. With pulses crashing, he strained his eyes into the surrounding blackness. Far away, he saw tiny flashes that were other ships, passing, racing on toward the finish. They no longer interested him. He wanted only one thing now. By the greatest good fortune, he found it.

He drew up alongside the wriggling figure and climbed out to help her in. Pulling off her helmet, she breathed a deep sigh of relief which changed to a gasp of joy when she recognized Jim.

"Well!" she exclaimed, trying to conceal her emotions, "you're getting to be a regular little Boy Scout, doing a good deed every day."

"Huh! If that isn't just like these modern girls," laughed Jim. "Save their lives and they wisecrack. You ought to sigh 'My hero!' and faint into my arms. Anyway, what happened?"

"I was outside putting in a new lining when someone rammed my ship and knocked it away from me—someone running without lights."

"Not hard to guess who that was," muttered Jim in a cold rage. "And there's nothing we can do except . . ." He looked down at his powerful hands.

"And you came back from first place for me!" she said gratefully. "Oh, you're burned. It's my turn to do a good deed. Let me patch you up."

"We're both out of the running now, I guess," he grumbled morosely while she encased him in voluminous bandages.

"Couldn't we transfer all my remaining fuel to your ship, abandon my tub, and sprint from here on?" she suggested.

"Ye-es." Jim was doubtful. "But where'll we put the gas? Oh, by Gemini!" he shouted suddenly. "I've still got all the empty tanks hanging on. Never had a chance to drop them. Say, we do get some lucky breaks. Come on!"

Back at the *Slopoke,* they quickly pumped its remaining fuel into Jim's racer, salvaged Lee's possessions, lit warning lights on the derelict and shot away in the *Comet.*

"Strap yourself into the bunk," Jim ordered. "We're going to burn a hole in this vacuum."

Under the full impulse of its motors, the ship leaped forward at almost unbearable acceleration. Half-strangled by the pressure, Jim counted the craft ahead and grinned wryly. There were twenty-seven. The leaders were invisible in the black distances, millions of miles in the lead.

The *Comet* tore on, its fuel gauge dropping at an alarming rate. With agonizing slowness, it caught and passed the ships before it. Spurting furiously, they battled to hold their places, but one by one they fell inevitably behind, compelled to yield by shortage of fuel. But the pacemakers, Carter, Ware and the Martian, were already across the orbit of Venus. Just a few hours from the finish.

JIM turned to look at Lee, lying with closed eyes in the bunk. "Still conscious?"

She gasped a reply.

"We're crawling," frowned Jim. "Got to blow air into the tanks to force the gas out faster. Better put on that oxygen mask."

The hiss of air entering the tanks was followed by a jerk as the *Comet* bounded forward even faster. From its rocket tubes, flaring streams of flame stretched out longer and longer.

"Sixth!" yelled Jim, as they crept up towards the fifth place rocket.

But, alive or dead, she would bring him in first. Over to the end of its range went the acceleration lever.

Thirty thousand miles to port, up 15 degrees, she saw the Martian spurt futilely as she passed. An hour later, Bill's *Zebra* fell slowly behind. Far ahead appeared the speck that was the *Meteor*.

The hours crawled on. Again and again she called the *Comet*, without response.

Carter's *Meteor* was off her starboard now, dropped slightly behind and clung there. Carter knew quite well what Lee was doing and he also knew she hadn't enough fuel to reach the finish at that pace. Unworried, he remained in second place.

Lee ignored him, looking only into the star-dotted void before her. Another few hours should bring her alongside the *Comet*, if nothing happened.

BUT happen it did. An abrupt change in the dull hum of the rocket motors told her the heat-resistant lining of a tube had burned out. Instantly, power was shut off. She slipped into her space suit, scooped up an armful of tools and dashed through the airlock. In a moment, she was tugging at the remnants of the lining and was preparing to slide a fresh one into place. Off to one side the stars were suddenly blotted out. She looked around. A huge black shape loomed beside her.

The thermometer read 155° and was imperceptibly and reluctantly falling when Jim emerged from darkness. Panting in the blasting heat, he sat up, arms and head burned and blistered where they had rested on the control desk, his strength drained by hours of unconsciousness. Hardly able to keep his senses, he surveyed the heavens. Startled and delighted at discovering his position so far ahead, he called Lee. The *Slopoke* did not answer. Worried, he called again. If she were asleep, the buzzer should wake her. Still no reply. He switched to Bill Ware's wavelength.

Ware blinked sleepily from the screen, then sat up with a jerk. "Jim!" he shouted. "Still among the living!"

"Spread a little mustard on me and I'll be the hot dog you mentioned a while ago," said Jim. "Where's Lee?"

"Don't know exactly. She passed some time ago going like a gamma ray. Must be half way to Sirius by now."

"She doesn't answer," began Jim, when his buzzer sounded. Switching from Ware to the new call, he saw Carter. "Seems your girl friend is in trouble," said Carter, without expression, and vanished.

Jim glared at the blank screen, then jumped to the telescope. A long search finally revealed the *Slopoke* drifting with dead motors. Unhesitatingly, he whirled to the controls and swung around to head straight back, accelerating to maximum.

Time crawled anxiously, the monotony broken only when the *Meteor* flashed by. Rumpling his tangled hair and biting his lips impatiently, Jim moodily stared at the *Meteor's* brilliant exhaust flares. By getting Jim to turn back from first place, Lee's predicament was very helpful to Carter.

Ware called. "Approaching the *Slopoke*," he reported. "Air-lock open. Motors dead. Lights on. Spinning."

"But where's Lee?" Jim demanded.

"I'm pulling up alongside," said Bill. "No sign of her. Jim, she must be stranded out here in space!"

Race of Death

WHEN Jim arrived at the *Slopoke*, Ware had found nothing new. "You go on," radioed Jim. "You can still capture second money." Bill departed reluctantly.

Jim strapped a reaction gun to his belt and went out to investigate. A long dent crumpled one side of the

Slopoke. His suspicions deepened. When he discovered the half-finished repairs, he was sure he knew what had happened.

Using the reaction gun, he swept in wide circles about the ship. A faint flash of light caught his eye. Speeding over, he found a metal wrench floating in space. At once he dashed back to his vessel and darted off along the straight line determined by Lee's ship and the wrench. With pulses crashing, he strained his eyes into the surrounding blackness. Far away, he saw tiny flashes that were other ships, passing, racing on toward the finish. They no longer interested him. He wanted only one thing now. By the greatest good fortune, he found it.

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"Sixth!" yelled Jim, as they crept up towards the fifth place rocket.

"We're back in the money. Now watch us go!"

Dragging an oxygen mask over his face with one hand, he pumped more air into the tanks with the other. He heard Lee moan as she sank into unconsciousness under the crushing acceleration and he, too, despite the oxygen was half insensible. But he could not reduce the acceleration. He would win now, or never.

"Fifth!" he choked, and a while later, "fourth!" Only the Martian, Ware and Carter were ahead.

The Martian put up a noble fight. For an hour he poured out his last fuel reserves in a heroic effort to maintain his position until, with a final desperate blast, he fell back with empty tanks and drifted helplessly, calling for a salvage ship to come pick him up.

Bill Ware didn't try to hold his lead. He was content with third place money. Besides, the duel he expected between Carter and Holt for first place would be worth witnessing.

As the *Comet* moved up behind the fleeting *Meteor*. Jim at last slowed down, planning to cling to Carter's tail and beat him in the last few thousand miles. Lee regained consciousness and left the bunk to watch. Wondering, they saw Carter draw off far to one side.

"Oh, oh, I know what he's up to," exclaimed Jim, tugging at the controls as Carter swooped at them. The *Comet* dodged in a sharp sweep that sent Lee sliding across the cabin and nearly pulled Jim from the pilot's chair. Carter straightened out and shot back onto the course in a blaze of flaming gas. By that manoeuvre he gained a great distance.

Once again the *Comet* crept up behind him.

When Lee, battered and bruised, rejoined Jim at the controls, he told her not to strap herself down. "Next time Mister Carter will do all the dodging. I'm sticking to my course. There he goes."

Again Carter was swinging off in a wide arc to dart at them. Jim held his course. As the *Meteor* dashed nearer, growing larger at a terrifying rate, Lee paled, but Jim doggedly removed his hands from the controls. At the last moment, when collision seemed certain, Carter whipped aside and passed by with but a few feet to spare.

The next instant, a frightful crash threw Lee violently across the cabin and tore Jim from the pilot's chair. The *Comet* tumbled aimlessly off the course, its occupants sprawled in unconsciousness.

Ralph Carter had executed a master stroke of trickery. Guessing that Jim would hold to his course and refuse to dodge a second time, Carter had disconnected the rear tank section of his ship while he shot straight at the *Comet*. When he swerved to safety, the disconnected part continued in its original direction and plunged like a huge projectile into the unfortunate *Comet*.

BLEEDING from several wounds, Jim sat up dizzily. A few moments of lusty swearing relieved his feelings, then he crawled over to Lee just as she opened her eyes with an unladylike remark concerning her aches and pains.

"If you hadn't dieted down to such skeleton thinness," he commented, binding a gash on her arm, "you'd have some padding properly distributed over you to absorb these knocks."

Lee ignored his criticisms. "What hit us?"

"Let's go out and see." With many half-suppressed groans, they wriggled into their space-suits. Outside, they found the rear of the *Comet* a mass of wreckage, inextricably mingled with part of the *Meteor*. Both realized what had happened, but were greatly perplexed by huge quantities of fuel that floated about in great spherical gobs.

When they returned to the cabin, Jim examined the fuel gauge. It stood at half of capacity. "Well, that stuff's

not ours, anyway. Our main tanks aren't leaking, lucky for us. Wonder where that fuel came from?"

"Can we break loose from that junk back there?" asked Lee.

"We'll see. Hold tight."

Unlocking the fastenings of the tail, he used the steering rockets to jerk the *Comet* sharply from side to side. Through the walls they could hear the cracking and straining of metal until, with a shudder, the forward part tore loose and a new *Comet* was born, half the length of the former, but airtight and shipshape.

"Onward!" laughed Lee.

"Yeah," grunted Jim disgustedly, "onward to twentieth place or so. Darn that guy's perverted genius. He's got the race sewed up now. We'll be lucky if we don't stagger in last."

"Looks that way," Lee agreed, her eye at the telescope. "Can't find a single ship. How long were we unconscious?"

"Can't tell. Chronometer's broken. Must have been hours."

"No!" cried Lee. "Look, Jim—there's Bill's *Zebra, coming*. So we're still in second place! Oh! Look, Jim, *look!*"

He leaped to the telescope and his jaw dropped in surprise. For nearby was the *Meteor,* drifting idly.

A roar of laughter burst from both when they realized why Carter had lingered. He couldn't do anything else. In his haste, he had unintentionally thrown *all* his fuel tanks at the *Comet* and was now floating helplessly, vainly trying to make his steering rockets do the work of the driving motors.

Greatly amused, Jim called Carter. "Want us to tow you in, Ralphie?" he chuckled. "You could still get second money that way."

Swearing furiously, Carter cut off. Jim started the *Comet* off again, drew Lee into his arms, and whirled her around the cabin in a happy dance, finishing by the telescope.

"Look there," he said.

Far off, a mere dot in the distance, was the end of the course, the ring of judges' ships.

"Mademoiselle," said Jim, bowing and holding out his arm with comic formality, "allow me to conduct you toward a hundred thousand dollars and two charmed circles."

"Two? I see only one," smiled Lee.

"Two," repeated Jim. "We go through the one up ahead; and as for the other—remember I'm the captain of this ship and you must obey orders—the fourth finger of your left hand goes through the other!"

FUTURE FICTION

JULY, 1940

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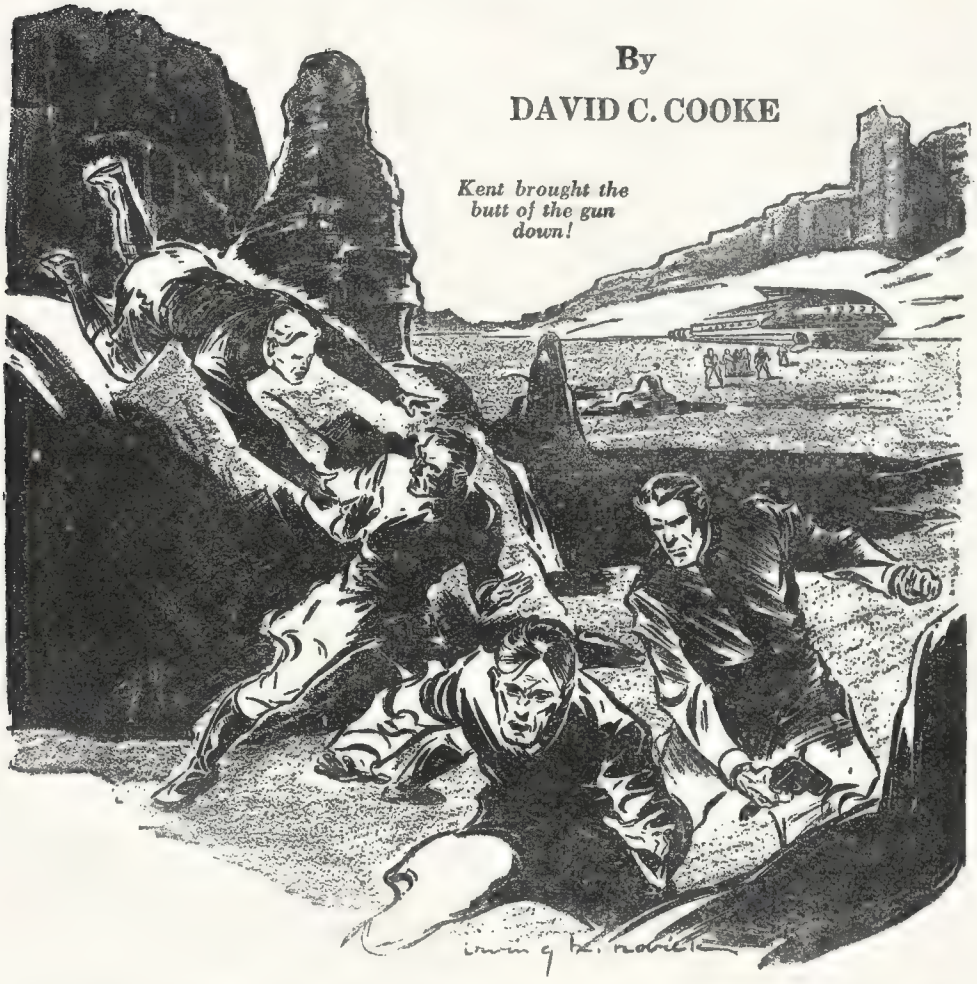
COVER BY SCOTT NOW ON SALE

Package of Power

By

DAVID C. COOKE



Kent was "through" as a spaceman—"too old," they said—but he wasn't "too old" to venture into the most dangerous stretch in the entire Universe!—and he was far from "through" when he tackled the outlaw gang on that bleak little asteroid—the struggle for the Package of Power!

THAT'S all he was, just a space-hound. Kent Cortile would rather sail through the uncharted space-lanes than eat. But those glorious days were now gone forever for Kent, for only last week the I.P.C. had revoked his license. They said he was too old!

"Too old!" Kent expostulated for the thousandth time. "Hump, I could still show those squirts a thing or two, even if I am thirty-eight." He walked over to the side of *The Wailing Winnie*, his old ship, and patted her affectionately. "Well, baby," he said, trying to control his emotions, "it looks like you and I are going to be parted at last. But I can't stand to

think of any other skipper taking your controls and guiding you through space."

Kent stood there on the dark field for several minutes, looking over the smooth lines of *The Wailing Winnie* with something akin to a tear in his eyes. Then he shrugged his shoulders dejectedly, rammed his hands into his pockets, and sauntered from the field.

He got into his car, which was standing in a vacant lot beside Santos Field, and slowly slid into gear. The coupe rolled away from the field and toward the highway.

But the car had not traveled more than a hundred yards when the danger siren blasted forth its rasping cacophony of sound. Kent stood on his brake pedal, and twisted around in his seat, just in time to see the huge silver shape of *The Wailing Winnie* go blasting down the take-off rails with her rocket jets cracked wide open. He muttered a curse and twisted his wheel, heading back to the field.

Santos Field was in a tumult when Kent's coupé tore up the road toward the administration building. He slammed on the brakes, ground to a sliding halt, and rushed through the door of his car. He grabbed a passing greaseball by the collar, spun him around, and demanded: "What happened? Who the hell's flying *Winnie* tonight?"

The greaseball turned a startled face toward Kent. "Pirates!" he exclaimed. "They stole *Winnie!*"

The man tried to struggle from Kent's grasp, but he slapped him viciously, trying to quiet him. "Now tell me," he demanded, "what happened. There's nothing that can be done now, and we might as well go about this thing civilly, Bruno."

Bruno Schmaltz quieted down immediately. "Yes, Sir, Captain Cortile," he answered, still looking nervously around. "I don't know the whole story, but I heard Mr. Collister say something about the pirates looting the *clordite* supply that we were to ship to the Army Department tomorrow."

"What!" exclaimed Kent. "The *clordite gone?* Why, with that they could control the Universe!"

"Yes, Sir, I know. That's why we're so worried."

"Has the Army been notified?"

"Yes. Mr. Collister contacted them immediately. They said that they were going to send their entire fleet out right away and warn the other planets to destroy the *Winnie* on sight."

"Fools!" exploded Kent, leaving Schmeltz and rushing toward the administration building. "They'll never find *Winnie.* She's got a greater range than any of the Government ships, and the pirates will probably hide out on an unknown satellite until it blows over—or until they can revamp *Winnie* so that she won't be recognized."

He reached the administration building, flung open the swinging doors, and hurried in. He came to a door marked "Private," and pushed it open. "Alex," he called to Collister, who was sitting behind a maple desk, holding his head dejectedly in his hands, "what the hell's this all about? Schmaltz told me that the *clordite* has been stolen."

Collister raised his head. "That's right," he said with finality. "Drake Hanley and his bunch of space cutthroats got the package and escaped in the *Winnie.*" He ran his hands through his disheveled gray hair nervously. Dejectedly, he went on: "I guess it's the end for Inter-Planetary Lines, Kent. In fact, if Hanley makes use of the *clordite* instead of trying to sell it to a warlike planet, the whole Universe will be ended." He picked up a pencil and scribbled aimlessly on a piece of scrap paper.

Cortile walked into the room, sat down in a chair beside Collister's desk. "Nonsense," he said, trying to sound convincing, "the Army boys will find

the *Winnie* easily. Hell, they couldn't miss her big hulk."

Collister shook his head again. "I doubt it. There're too many places in space in which to hide. They'll never be able to find them."

Cortile suddenly got an idea. "Say!" he exclaimed enthusiastically, "I'll bet rockets to steam jets that they'll head for 'Hell Stretch.' That's the last place in the Universe anybody would ever think of looking!" He paused for a moment, expecting a reply. Receiving none, he continued: "Say, Alex, how's about letting me have a ship and a crew? I'm *positive* that I could locate them."

Angrily, Collister jumped up from his chair. "*You!*" he exclaimed. "Why you're not even fit to ride the regular routes, much less try 'Hell Stretch'. Get the hell out of here, Cortile. I've no time to listen to foolish arguments of has-beens!"

KENT got. He knew better than to hang around where he wasn't wanted. But Collister's remarks had hurt him to the quick. He had known Alexander Collister through thick and thin, had even loaned him money when the going had been tough, and now he as much as called him a decrepit old fool that didn't know what he was talking about. He realized, however, that Collister couldn't be responsible for things he said under stress, and, since he could be of no assistance at Santos Field, Kent made his way back to his apartment.

He sat in his study throughout that night with all of the available information on "Hell Stretch" in front of him. That thousand-mile expanse in dense space had been rightly named, too. Never shifting, never changing an iota, "Hell Stretch" was a wart in space that had taken an untold number of spaceships to doom. The theory was that this mass of asteroids and planetoids would form a new planet between Mars and Jupiter. And Kent Cortile was the only man living who had come through that mass alive. He was the only one who had, according to all records, plotted anything that might be called a course between those dangerous asteroids. And now Kent was deep in study, desperately planning to once again transgress that fathomless section in search of the pirates who were in control of the deadly *clordite*.

Weary-eyed and clearly showing the effects of his sleepless night, Kent disturbed Denis Farrish, one of his closest friends, early the next morning. He got in Farrish's apartment with a pass key and awakened his friend rudely.

"Denis!" he exclaimed feverishly. "Wake up. I've got it!"

Farrish opened his eyes, startled, blinked and then opened them again. "You've got a hell of a nerve," he said, "getting a guy out of bed this early in the morning. What the devil do you want, and what have you 'got'?"

Kent smiled at Farrish, who was still blinking, trying to accustom his eyes to the early-morning light. He sat down on the side of the bed. "Sorry, old top," he apologized. "Guess I shouldn't have been so crude, but I'm quite positive that I know where to find the pirates that stole the *Clordite*."

"Go way," said Farrish, yawning. He turned over and closed his eyes. Then he abruptly sat up. "Pirates? *Clordite?* What the hell are you talking about, anyway, Kent?" he demanded.

Patiently, Kent told the whole story. Apparently, Denis had been on a big party the night before and had not heard anything about it.

"Yes, I understand about the pirates all right, and why they should be apprehended," said Denis after Cortile had finished. "But what's this *clordite?* I never heard of the blasted stuff before."

"Very few people have," answered Kent. "You see, it's a secret preparation that some guy invented, and according to everything I've heard,

it's just about the most dangerous stuff that's ever been made. Don't know much about it, but this guy Martin Clordite—the fellow who invented it—says that even if its rays are projected on a microphone in a radio station it's potent enough to draw the calcium out of every person who might be listening in."

"Whew," whistled Farrish. "From now on my radio stays off. But say," he added, "what's all this got to do with me?"

"Just that I want to borrow your ship to look up these pirate guys," Kent said coyly. "I've got a hunch that they're on Nova Kappa; you know, that's the only one of the planetoids in 'Hell Stretch' that has an oxygen atmosphere."

"God, man, are you crazy?" expostulated Denis, getting out of bed. "You wouldn't dare go into the 'Stretch' looking for them—or would you?"

"Nova Kappa is on the course that I plotted through the wart," answered Kent, lighting a cigarette. "And I *know* that I'll be able to make the trip. After all, I did it once, didn't I?"

"Okay," sighed Farrish. "I guess it's no use arguing with a spacehound like you." He pulled off his pajamas and walked toward the shower. "When do we start?" he called back over his shoulder.

Kent tossed his cigarette away and rushed after Farrish. "When do *we* start?" he said, raising his voice to be heard over the noise of the shower. "*We* don't! But *I* do just as soon as your ship can be put in commission."

"Oh, no you don't," Farrish yelled back as he lathered his hair with soap. "We're going together, or you're not going. Don't think that you're going to cash in on the glory alone, Kent. My neck's going to be in on this as well as yours." He then pulled the glass door of the shower shut, made an adjustment on the water temperature, and started to sing a popular little ditty at the top of his lungs.

Cortile knew there was no use arguing. He shrugged his shoulders and went into the other room.

Into "Hell Stretch"!

AFTER a full week of feverish work, Farrish's small sportship was ready for the strenuous trip that it was about to undertake. The deflector screen had been checked and rechecked, the rocket tubes had all been refaced and bored to size, and the fuel tank had been increased in capacity so that sufficient propulsion liquids could be carried to take the tiny ship safely to the "Hell Stretch" region and back again.

"Well, that's that," said Kent after every last rivet in the ship had been checked thoroughly. "Now maybe we'll be able to accomplish the job that the Government boys failed on, eh, Denis?"

Farrish wiped a greasy hand across his forehead, sat down on the port panel of the *Black Bullet's* stubby wing. "Yeah," he said. "At least, I *hope* we will. If not, I don't see what I'm going to be able to do with my evenings in the future. Hell, I'll be afraid to go any place near a radio receiver."

"No use to worry about that for a while," answered Kent, smiling, as he climbed out of his dungarees. "Drake Hanley will stay in hiding for quite a while yet, I'll bet, and won't venture from hiding until he's had time to lift *Winnie's* face. And maybe long before that time, we'll have that supply of hellish *clordite* in the hands of the Army Department."

Farrish looked at the luminous dial of his wrist-watch, whistled softly. "Say," he said, "it's after twelve o'clock. And if we expect to take off early tomorrow morning, we'd better hop back to the apartment and get some shut-eye, pronto."

Kent agreed, and they left Farrish's small hangar. It was only a short drive back to the city, and within a half hour they were in bed

and asleep, resting for the long trip that was ahead of them.

When the sun broke early the next morning, Kent and Denis were out at the little private flying field on the outskirts of the city. The *Black Bullet,* gleaming dully in the early morning light, was resting on the runway on its single wheel and wing skids.

"Okay," said Kent as he stored ample food and armaments within the ship, "I guess we're ready to blast now." He stood back and surveyed the ship for a moment, and then added: "You know, Denis, it strikes me sort of odd that an old space-hound like myself, who no longer has a license, and a guy like you, who has never been far outside of the stratosphere, should be going out in a little sport ship to look for a band of pirates."

"It's not so funny," answered Farrish as he seated himself behind the dual controls. "And you're just a little mixed up, too. You know damn well that you're not looking for the pirates—the only thing you give a damn about is that old ship of yours."

"Well, fellow," agreed Kent as he took his place behind the controls, "you've really hit a sore spot there. Yes, I'd readily give my right arm to see *Winnie* safe, but I'd rather see her destroyed—and I mean it—than to have Hanley get away scot free." He closed the door, sealed it, and buckled his safety strap. "Better take a last look, Denis," he added. "We're on our way at last, and it's an even chance that we'll never get back alive."

Farrish looked, a smile playing around the corners of his mouth.

Kent slowly pushed the throttle forward. The little ship started moving down the runway, gathering speed with every foot. At last the stubby wings created enough vacuum to give the *Bullet* flying buoyancy, and Kent drew back slowly on the column, sent her hurtling into the air. He retracted the wheel and wing skids and made an adjustment on the fuel to set the propulsion gas at its most economical mixture. Then he set his course for "Hell Stretch" and cut in "Iron Mike," the automatic pilot, to take over the bulk of the work.

"Off at last," sighed Farrish. "That week was plenty long, Kent, and I thought that this day would never come."

"Yes," answered Kent, "I was becoming a little impatient, too. But it was best to be absolutely sure that everything was in readiness before venturing out into deep space. You know, these little sport jobs were never meant to travel as far as we're going."

"And that's just the reason you picked on me, you old soak," added Farrish. "Don't think you pulled the wool over my eyes. You know damn well that the Interplanetary Commerce Commission would never suspect you of pulling a stunt like this. Yes, there's no way that they'll be able to check up on you unless some wise guy down in Washington starts investigating our disappearance and puts two and two together."

A sly smile passed over Kent's features. And then the smile became a frown as they approached the Heaviside Layer. As they passed through the upper atmosphere safely, the smile returned and he set the rocket controls for more power.

"Guess I'm not quite clever enough for you, Denis," he said after the adjustment had been made. "But, remember, we're on a serious job, and since, according to my deductions, we should reach 'Hell Stretch' well within fifty hours, I think that we should spend plenty of our time in plotting a possible means of attack that could be put into effect if—or when—we find Hanley and his gang."

He took a pad of paper from the leg pocket of his fur-lined space-suit and started to figure on it. "Now, if I'm right in believing that they're on Nova Kappa," he continued, "I believe that it would be much better to approach from the opposite side of

the 'Stretch.' Then, unless they've got sentries stationed, we should be able to slip through and land on the planetoid without being seen."

Farrish nodded his approval. "Yes," he said, "it sounds okay to me. But let's just wait and see what really happens."

They settled back in silence.

"HELL STRETCH" appeared as a giant, luminous ball of fire in the midst of space. And Kent blasted his control rockets into action and skirted around to the opposite side of the wart. He then cut in his nose jets full force and slowed the *Bullet* to virtually stalling speed, at the same time looking for the familiar passage that he had traversed years before.

At last, after a long search, Kent shouted joyously: "Look, Denis, over there! It's it!"

Farrish looked. Puzzled, he asked: "What? Where? I don't see a break in the surface anywhere."

Kent calmed down. He knew that the trip through "Hell Stretch" was going to tax him to the limit, and he knew, also, that he couldn't afford to waste his energy on excitement. "See that spot that's just a little bit lighter than the rest of the surface—there it is, right over there. Well, that's the entrance that we're going to use."

Farrish nodded. And then he shuddered as he thought of entering that grim, foreboding area that had taken so many men to their death. But he also knew that the fate of the Universe might be depending upon them and what they could accomplish, and that wiped every vestige of fear from his mind.

Cortile took the ship off the wart on a tangent. Then he slowed down still more and headed back, straight for that dull spot.

The *Bullet* slowly shoved her nose into that luminous area. The light was blinding and Kent called to Farrish to slip a pair of darkened goggles over his eyes. The tinted lenses in place, he could see much better and could more closely watch the bodies within that area as they constantly kept moving, but always keeping within the boundaries of the wart.

"Look out!" Farrish screamed, pointing frantically at a meteorite that was hurtling straight for them.

Kent blasted his nose rockets full on, cut the rear ones. The ship slipped in reverse, just missing the static stalling point. And he was none too quick, for the huge chunk of stone ripped through the spot that they had just left. Kent then cut the forward jets and brought the propulsion tubes into play.

"Hope that baby misses us on the way back," said Kent, wiping perspiration from his brow with his free hand. "Those things, you know, just keep up that act indefinitely. They bounce right back again when they hit the lower layer of the 'Stretch.' "

Farrish didn't venture to answer. He leaned back in his seat, exhausted, and then hunched forward again, once more on the lookout for meteoric chunks.

Several more times they dodged the falling bits of stone before the *Bullet* reached the upper atmosphere of Nova Kappa. And then the air was virtually free of alien bodies. For some strange reason, the men noticed, the gravity of the planetoid seemed to *repel* the other bodies instead of attracting them.

Farrish sighed in relief as the surface of Nova Kappa came into sight. "Damn," he said, "I'm sure glad that's over with! For a while there I sort of figured that we wouldn't get through. We had some plenty close calls, you know, Kent."

"Yes," answered Cortile. "One of those babies didn't miss us more than ten feet on the rebound. Lucky I didn't waste any time in cutting in the propulsion jets. But," he added, thoughtfully, "unless I'm wrong, our biggest worry is right ahead of us. After we land we're going to have a tall job on our hands trying to get that package of *clordite* away from

Hanley and his men. And if we don't succeed and they catch us. . . ."

He left the sentence unfinished. But Farrish knew that the pirates would waste little sympathy on them.

Kent took the *Bullet* down to about a hundred feet. Then, riding the ship just as close to the stalling speed as possible, he scoured the face of the planetoid for a landing spot. After a while, he located a narrow and shallow ravine that was just deep enough to hide the craft and was smooth enough to land on.

Jockeying his controls gingerly, he brought the *Bullet* into the gulley after he had extended the landing gear and skids. The single wheel touched softly, bounced several times, and then took hold. He applied the brakes and brought the ship to a stop.

They climbed out of the *Bullet* and stretched their aching muscles. "We'd better turn her around," Kent said. "If things get too hot we might have to take-off in a mighty big hurry. Might not be enough time if we wait until the last moment."

Together, then, they inserted the lift bar and swung the tail around until the nose of the *Bullet* was pointing toward the unobstructed end of the gulley.

Kent removed his space-suit, took a couple of atomic hand weapons from the hold. "Here," he said handing one to Farrish, "you'll undoubtedly find good use for this if we locate Hanley's mob. Better keep it handy."

Farrish stuck the gun in his belt. Then they started off on foot to look for the *Winnie* and her cargo of pirates and *clordite*.

Intrigue on a Space-Rock

THERE was never anything but day-light within "Hell Stretch," so there was no definite way of calculating a day, or even hours. But according to Earth time, they walked for the better part of an hour before deciding to rest. And because of the difference in gravity between little Nova Kappa and the Earth, they were able to travel much more rapidly than ordinarily without becoming actually tired. So they stopped to rest—not because they were exhausted, but because they knew that every ounce of strength that could be commanded would be of use—if they found the *Winnie*.

"Half hour's up," said Farrish. "Time to start moving again. And let's hope that this time we won't have to travel quite so far before we locate something."

"Yes," answered Kent as he finished the last morsel of his rations, "let's hope. But, as a matter of fact, Denis, it would be impossible for us to travel that far again without locating anything—if there's anything here. We've traveled a good half-way around this globe, and if *Winnie's* here, we should spot her any minute. That's why I suggested that we rest here instead of farther on."

They started trudging forward again, going up hills and down the other side, leaping over narrow gullies and going around larger ones. And then, as they reached the top of a hill about an hour later, Kent stopped abruptly and fell flat on his stomach.

"Get down!" he commanded Farrish. "There's *The Wailing Winnie* right smack ahead of us! There're too many men around it now to attempt to approach closer."

Farrish started to let out a whoop of joy, checked himself, and then whispered: "How far ahead, and how long do you think it'll be before we can go on?"

"I don't know," Kent answered in hushed tones. "We might have to wait hours yet." He peered up over the hill, slid back hastily. "Hide yourself," he ordered. "Here come two of Hanley's men! But if they come close enough, rush them. We can use those clothes they're wearing."

Farrish and Cortile hid behind a huge boulder, waiting patiently.

In a few minutes, the two pirates

came over the crest of the hill. They were talking. One said: "Drake told me only this morning that we'll be pulling out of here any day now. Since the Army Department gave up the search, he figures that they think we're lost." He laughed harshly. "Boy, what a surprise those guys will get when they turn on their radios after we get back!"

"Yeah," the other pirate agreed. "And Drake's already promised to make me governor of Mexico. What a swell time I'll have making those guys sweat."

CORTILE forcefully restrained a curse. He nudged Farrish when the two pirates approached opposite, and they jumped from behind the boulder at them. Farrish caught one of the men around the neck, tried to throttle him. Kent brought a stiff uppercut to the other man's chin and knocked him completely out, then he turned to help Farrish.

The pirate put up a tough fight trying to break that grip on his windpipe, but Farrish's fingers only bit in deeper. Kent raised the butt of his gun and brought it down on top of the man's head, ending the struggle sooner.

Silently, they stripped of their outer garments and donned those of the pirates. Then they rubbed some damp clay on their faces to try to allay chances of detection.

"Come on," said Kent after they had finished. "Let's get this over with as soon as possible. It would be too dangerous to use our guns this close to the ship, and just as soon as those men regain consciousness they'll broadcast the news that we're here.

"But where's the best place to look?" asked Farrish as they walked nonchalantly back toward the *Winnie*. "That's a pretty big ship and we haven't got any too much time to spare."

Kent lowered his voice as they drew nearer. "I figure that Hanley will have it in the safe in the skipper's compartment. He wouldn't trust any of his mob. But we'd better change the subject; some of those men are liable to hear us and think something's fishy."

Talking naturally about nothing in particular, they walked up to the ship. Kent waved friendly to one of the men who turned his way as he climbed up the entrance ladder. The man returned the greeting.

Silently, Kent led the way through the passageways in the hull of the ship. They saw some men working on one of the huge ventilating blowers, and gave them a wide path, detouring down below the floor and climbing through the girders. Then, at last, Kent walked out into a large compartment well forward, Denis still following.

"How much farther?" Farrish asked, plainly showing his nervousness. "Those guys are liable to regain consciousness any moment, you know."

Kent didn't answer. Instead, he motioned toward a door on the right of the compartment, down at the other end. He made his way to that door, eased it slowly open, and stepped inside. Farrish followed and closed the portal securely behind him.

Now that they were safe from detection for the moment, Kent moved freely. "Quick," he ordered Farrish, "help me move that radio." And together they pulled a large receiver away from the wall. Then he continued, getting down on his knees and spinning the dial of a wall-safe: "If it's in here—and I think it is—we'll be out of the ship and on our way back in a few seconds."

"Yes," answered Farrish as he stood on guard at the door, "but suppose it's not? And suppose that one of Drake Hanley's men catches us?"

Kent spun the dial to the right, then to the left. "That," he answered, spinning the dial back to the right again, "is one of those things we'll have to hope won't happen." He

turned the handle, gave it a jerk, and pulled the door open.

After a moment's search, he grabbed a small package. "Eureka!" he shouted. "Here it is!" And then, in subdued tones, he continued: "Let's get out of here pronto, Denis. I'm beginning to get a little scared."

"Right," came the answer. "And don't think you're the *only* one." Farrish cautiously stuck his head out through the door, looked both ways. "Okay," he whispered. "Let's go."

Apparently most of Hanley's men were some place on the outside, for the ship was almost deserted as they made their way through the very bottom level of the hull. "Say, Kent," ventured Farrish as they broke into a fast trot, "do you think those two guys came to and spilled everything? Looks a little too quiet for me."

"Don't know," Kent said between breaths. "But let's get out of here as soon as possible."

A few moments later they were at the exit and descending the ladder as slowly as possible, trying not to arouse suspicion. They got to the ground and started walking. So far, none of the pirates had given them any more than a glance, but after the pair had gone about a hundred yards from *The Winnie,* a voice yelled: "Get them, men! There they are—them with the package!"

The pirates started walking toward Kent and Denis, who had stopped abruptly, taken aback at the command from Hanley. One of the pirates started to raise a gun, but Hanley's rasping voice called out: "Stop, you fool! Take them alive. If you damage that package, you'll kill us all!"

That gave Kent an idea. He rapidly lifted his atomic gun from its holster and placed its muzzle against the package of *clordite.* He turned to Hanley. "Damn you, Hanley, tell your men to draw back or I'll blast you all to hell. If I squeeze the trigger, the *clordite* will be released."

Hanley started to rush forward, saw the determined look on Kent's face, then stopped short. "Draw back," he hastily told his men. "The damn fool will kill us all!"

Kent and Denis ran in the direction of their ship as the pirates stood rooted to the ground. They sped over the ground rapidly, covering space in leaps of ten to fifteen feet.

Sometime later, as they came near the hiding place of the *Black Bullet,* Denis looked over his shoulder. "Kent," he yelled, "they're coming! Hanley's got the *Winnie* in the air. They'll blast us and then beat it!"

"Maybe not," answered Cortile as he leaped from the top of the gulley that the *Bullet* was hidden in, landing beside the ship. "Get in quick," he added, throwing the door open.

DENIS got in, buckled his belt hastily, and then Kent climbed in, sealing the door after him. He threw the throttle open, after switching on, and the ship started to roll forward as the rockets started to blast. He shot the throttle all the way forward and pulled the *Bullet* into the air just as *Winnie* arrived overhead. "We've got a chance," he told Denis, "of getting away if we reach the Heaviside Layer before they do."

And then a shot blasted out from the *Winnie* and flashed across their bow. The air disturbance made the *Bullet* flounder momentarily, just enough to make the second shot miss them. And then they were out in the grim space of "Hell Stretch."

Kent hauled back on the throttle, donned dark glasses, and began to pick his way through the space. The *Winnie* came through behind, also slowing down.

Out of the corner of his eye, Kent saw a meteoroid hurtling at them. He knew that it would be dangerous to go in reverse, because of the *Winnie,* and consequently slammed the throttle well ahead. The stone flashed in their wake, making the *Bullet* swerve slightly as Kent cut in the forward jets to cut down speed.

Not daring to look back, Kent

continued to look forward while Denis watched the *Winnie*. And then, just as Kent dodged another piece of space débris, Denis yelled: "Kent, the *Winnie*—she's falling! The meteoroid we just dodged bounced back and caught her in mid-section!"

Kent's heart was pounding madly. He didn't dare to look back, but in a sense he was glad that he couldn't see his old ship being destroyed. "Well," that's a relief," he sighed, now that he knew they were safe. "Sorry to see her go, though.

"But what about that *clordite*, Denis?" he continued, still guiding the *Bullet* carefully. "What say we ditch it through the air-lock while we're still in the 'Stretch'? It'll never be found here, and will probably save thousands of lives if war ever comes again. They won't be able to manufacture any more of it, you know, because the formula is in the package that we've got."

Nodding his agreement, Denis gently lowered the lethal bundle into the air-lock and pressed the release, sending it into space. "Boy, what a load off my mind," he said. "Now I'll be able to listen to my radio in peace until I'm an old, old man."

SCIENCE FICTION

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THE pilot in the helm of the huge ocean liner leaned lazily on the open window's ledge, gazing out dreamily over the azure stretches of the Atlantic, which was almost lake-like in its smoothness.

Suddenly his day-dreaming was disturbed. A peculiar feeling shot through him. He couldn't define it, but it was a sensation of reversal, somehow. As though he had been whirled about with super-speed. An intense vertigo gripped him. Seasickness? He — veteran of a hundred trips? Incredible! Besides, that calm sea was not the kind to give the ship any sort of roll.

Power unlimited and peace on earth was the very life-force of Professor Howard Manning, but his collaborator, and brother, Dr. John Manning, was a power-mad egotist who would pervert his scientific genius to make slaves of his fellow beings!

The sensation passed in a second, but still the pilot felt strange. What in the devil was wrong with him? Uneasily, he ran to look at the ship's instruments. His eyes snapped open and threatened to pop from their sockets.

Something *was* wrong! A moment before the ship had been sailing almost due east, to Europe. Now, according to the compass, *it had swung due south!*

Yet one glance at the sun convinced him that the ship had *not* made an incredible right-angle turn. Then it was just the compass—

Suddenly, the same feeling gripped him again. It seemed to wrench his internal organs, every body-cell, out of place. From below came cries of alarm, from the passengers. He glanced at the compass and saw that it had swung again and was now pointing east for north. After that there occurred several more twinges of momentary nausea and the compass became a mad thing, darting every which way.

Bewildered, the pilot looked at the barometer. It was dropping like a ton of bricks!

This heralded a sudden and profound change in weather. Clouds had piled up miraculously, changing the Atlantic from a sparkling glory of blue to a brooding, ominous sea of dun. Lightning began sending its fiery fingers over the sky. The rumble of thunder poured through the air like a river of sound. A howling gale arose that lashed the water to a frenzy.

Huge waves broke against the ship, giving it a roll that quickly sent most passengers to the rail or to their cabins. A terrific storm broke over the Atlantic that had been so peaceful fifteen minutes before. Rain came down as though poured from the sky.

One phenomenon stood out above the others, during the storm. St. Elmo's Fire, a queer phosphorescent dancing glow, appeared over every bit of metal in the ship. More than one passenger was frightened out of his wits to see the ghostly light prancing around his cabin.

The bewildered captain of the ship, feeling completely lost without the guidance of sun, stars, or compass, ordered the ship stopped and waited for the storm to blow over. Three hours later the sun broke through the cloud veils and all became serene again.

The compass was once again normal!

THE same phenomenon manifested itself all over earth at the same time, in varying degrees of abnormality. Everyone on earth had that feeling of internal reversal—of "going through the looking-glass". All meteorological instruments went temporarily insane. Barometers shot to new highs and lows. Compasses pointed to the west and called it north, and later began spinning like dervishes, as though not sure any more which way was north.

Humidity values varied from air drained dry of moisture to air so saturated with it that droplets leaped out as from an overfilled vessel. The mercury columns of thermometers shot past the figures of the scale with unbelievable rapidity, sometimes up, sometimes down.

Violent electrical storms occurred over most of earth. The prongs of lightning split the sky in almost continuous succession. Yet it was a peculiar lightning that occurred only in the upper air, blazing from cloud to cloud. Very little of it struck earth. The weird St. Elmo's Fire took part in a pyrotechnic display that would go down in history as the most amazing ever seen.

Speculation ran its usual gamut among earth's millions, but even the foremost meteorologists were completely mystified. It was apparent that some unusual phenomenon had disturbed earth's normal weather for the three hours it lasted, but the cause —that was unknown.

AT a snow-covered Montreal airport, Martin Fenstrom taxied his large low-winged transport ship down the runway on its wide skis. It lifted ponderously and smoothly into the air.

All his life Martin Fenstrom, still a young man, had knocked around the world, seeking escape from humdrumness. There was hardly a spot on earth that had not seen his freckled face, keen blue eyes offset by curly black hair, and rugged frame, at one time or another. Yet, in all his adventuring, Fenstrom had never been so intrigued as in the present one. He could hardly believe, at times, that up to the north—

Fenstrom had been with his present employer for just two years now, longer than he had ever before stuck with one thing. Once a month or oftener he had piloted his great Boeing to the south, to Montreal, for supplies for the northern encampment. Fenstrom was being paid well, and liked the work. But lately, he had been wondering about certain things. Especially what that brief, but violent, storm of the day before had signified.

Straight north the plane droned, over a land in the grip of winter. Then over a corner of Hudson Bay and into the baren reaches of northern Canada. Below lay a mottled blanket of white, broken only by ice-covered lakes and patches of fir forest. A desolate country, growing more desolate with each mile. Always due north—as straight north as he could by the compass. His destination was the North Magnetic Pole of earth, on the Boothia Peninsula of Canada's north coast, bordering the Arctic Sea.

Fenstrom had to laugh a little at the ease of finding his haven. All he had to do was parallel the axis of the compass needle. And its dip—it was suspended from a quartz fiber—indicated his approach graphically. When it began to point almost straight down, Fenstrom knew he was near. He had flown fifteen hours.

Fenstrom lowered the ship in a darkness that was due to last for another three weeks in this latitude of 71 degrees. At last he saw the lights of the encampment that existed in an eternal winter not 1300 miles from the geographic North Pole. His compass needle stood rigidly vertical.

Revealed by the gibbous moon overhead, he saw the familiar group of igloos—ice houses—surrounding a long low structure of sheet metal. Back of this was a queer tesselated

tower supporting a hoop from which hung dozens of wire-strands. It was not odd to Fenstrom to see these man-made things in this cold wilderness, but it was a secret that the world did not know.

Under his skilled guidance, the huge ship lowered like a feather and skudded lightly over the packed level of snow. Already figures came running from the igloos a few hundred yards away. Fenstrom answered their rousing greetings with a wave of the hand, as he stepped from the cabin, and instructed one of the men to keep the engine idling for an hour to let it cool down slowly.

"Did you bring me my Clover-cut tobacco?" yelled one of the men as he started unloading the fuselage.

"Sure," grinned the pilot.

Then he trudged toward the encampment. An icy wind whipped against his exposed face. He approached the only permanent structure of the camp, the long low housing of thin but strong sheet metal. From its several windows gleamed light—electric light. He opened the felt-lined door and stepped in, taking off his gloves and opening the zippers of his parka at the breath of warm air that met him. He heard the low drone of the apparatus at the back which supplied current for heating, lighting and other purposes, even to the igloos.

Fenstrom pulled out a cigarette and lit it. Half-way down the laboratory a short thin man of about fifty looked up from the apparatus covering the wooden bench before him. He came forward with a slight smile wrinkling the parchment skin of his rather sad face.

"Back already, Fernstrom?" he said in a preoccupied voice. His eyes sparkled suddenly. "Did you observe the phenomenon of two days ago, down there in Montreal?"

The pilot nodded. "Yes. As you predicted, the compass needle went crazy. It did everything but stand on its head and how it lied about where north was! But say, Professor Manning, what was all that other stuff? Electrical disturbances, sudden storms, and a pretty bad mix-up of weather conditions. I didn't like it, and I don't think anybody else on earth did."

PROFESSOR HOWARD MANNING'S melancholy face quickly became lined with remorse. "We temporarily lost control and could not switch the earth's magnetic field to normal in less than three hours," he muttered. His lips twitched a little. "For the first time I'm beginning to realize what a—a powerful thing this is. Perhaps—" He did not finish the thought, but stood there frowning.

"And that peculiar feeling of—of being turned inside out," went on Fenstrom. "That was damnable. Others felt it, whom I heard talking, so evidently it was universal."

"Yes, everyone felt it," nodded the diminutive scientist. I heard all the reports over the radio. It put quite a scare into people, who, of course, imagined all sorts of dire things. As a matter of fact, it is a harmless, though disconcerting effect. Every cell of your body is a tiny electro-magnetic unit, producing neutral impulses of an electrical nature.

"In his noted book *The Phenomena of Life,* the world-famous Dr. George Crile reveals evidence of the tiny radiogens—miniature electrical generators in the body-cell. Thus, all your body processes are electromagnetic in character. You live and move in earth's magnetic field. When the field is suddenly changed in any way, you are correspondingly affected. Not physically, but in your nervous system.

"It is all an effect of the *crossing* of magnetic lines of force. Have you heard that a person sleeps better with head north and feet south—again Dr. Crile is the authority—with the body parallel to earth's magnetic lines of

force? It's true, because there is no crossing of lines which produce currents that have a disturbing effect in the neural paths of the human body."

"You're over my head," murmured Fenstrom. "But I would like to know what this research is all about. For two years I've been hauling supplies and equipment. I thought it was what they call 'pure research', but since that twisting of the compass the other day, I realize it may have practical significance as well."

Professor Manning raised a finger dramatically and seemed to swell up and grow larger. "Fenstrom, this marks a red-letter day in science! For we — my brother and myself — have harnessed the earth's titanic magnetic force-field. We now have an illimitable power, with which we can benefit mankind—if we can control it. Uncontrolled"—his pinched face became drawn with inner worry—"it could be a terrible menace. Sometimes the responsibility—"

He chopped off his words suddenly, looked up. "You must be tired, Fenstrom. Go and get some rest. I'll tell you more about all this tomorrow."

The pilot realized he *was* tired. He zippered up his parka and stepped out. He stopped for a moment, looking up. Almost directly overhead the Aurora Borealis had spangled the starry firmament with multi-colored glory. Gauzy curtains of gold and rose and sea-green shimmered as though caught in an ether-breeze. Long, delicate streamers of milky white, like searchlight beams, probed the black vault above. Bubbles of swiftly changing hue expanded outward like the visible concussion waves of some gentle, silent explosion.

Almost every day for two years Fenstrom had seen these magnificent Auroral displays, yet he knew he would never tire of them. He sighed without knuowing it and tore his eyes away. Snow-needles whipped up by a gusty wind tingled on his face as he strode along to one of the igloos. Larger than the others, it was the general mess-hall. Savory odors met Fenstrom as he went in.

He had a meal of bear-meat and rice, talked with the men there a bit, and then left for the sleeping quarters he shared with two others. Fenstrom fell asleep quickly in a deer-skin bunk.

PROFESSOR HOWARD MANNING was a scientific genius. The radio and television set he had here, a product of his own mind, was a superinstrument that could reach around the earth. It hummed busily as his long, sensitive fingers twisted the vernier dials. Spangles of light ghosted into the vision screen and solidified to the image of a face.

Startlingly, the face seemed to be a mirrored image of his own. Yet it came from 12,000 miles away. It was the face of Dr. John Manning, his brother. No less of a scientific genius, John Manning's voice came in greeting from earth South Magnetic Pole, in the portion of the continent Antarctica called South Victoria Land.

These two, born of a wealthy family, had been educated in the best universities of the world. Later, in middle life, working in collaboration in a private laboratory, they had discovered certain secrets of magnetism. With unlimited funds from inheritance, they had finally equipped two expeditions, one for the South Magnetic Pole and one for the northern. Here they had been for two years, transporting into the frozen wastes a wealth of scientific apparatus that would have made any scientist gasp.

All this had been done in secrecy, though they had the formal permits from the Canadian and Australian governments respectively, to be in their territories.

On closer observance, the figure mirrored in the television screen resembled Howard Manning only facially. And even there, the resemblance was superficial. John Manning's face was not sad, like his brother's—it was hard, almost brutal in cast. His

cheeks were full and his eyes gleamed with a certain lack of refinement. He was a big obese man, almost two of his smaller brother.

His voice roared a bull-like greeting from the loudspeaker. Then he scowled as he waited for the little man to speak up, for he had made the call.

"John," began Howard Manning timidly. "I've been thinking things over. This experiment is dangerous! We'd better not take the next step till we have better control. We lost our grip with the electro-grapples the other day and earth's magnetic field rotated for three hours out of control before its own momentum slowed it down. We failed to—"

"What!" roared the man at the South Magnetic Pole. "Why, that was a signal success! A feather in our cap! A milestone in science! Earth's magnetic field made to rotate longitudinally for the first time in history, and you speak as though it were a failure!"

His thick lips writhed suddenly. "Howard, you little chicken-hearted runt, don't back down on me!"

"You got me into this!" wailed the little scientist. "I'm *afraid* to go on. We don't know—"

"We don't know, but we're going to find out!" the television image shouted so that the loudspeaker rattled. "Going to find out just how much *power* this represents." His eyes gleamed fanatically. "And then—"

"And then—what?" asked the little man, stiffening.

"Why, what do you think?" said the other in mock sweetness. "We'll give mankind a legacy of power a million times greater than that of all the coal there ever was!"

HOWARD MANNING'S face lit up, at this, like that of a visionary. It was his greatest aim, to benefit humanity in this work of theirs. His brother's rumbling voice shattered his spell: "Now get over those qualms of yours, Howard. Test all your apparatus and tomorrow we'll try again. Goodbye."

The little professor turned away from the set with a feeling that he was being hurried along by his ruthless, determined brother to an undesirable goal. His sad little face became sadder.

After a hearty and hot breakfast of venison steak the next morning, Fenstrom went to the laboratory and helped Manning solder leads to a panel of studs that led to the outside loop of wires.

"We're changing the set-up a little," explained Manning, "so we can get a better grip on earth's magnetic field."

"Which is just about as clear as frozen mud to me," grinned the pilot.

"I'll begin at the begnning," continued the professor. "Ten years ago my brother and I discovered, in investigating magnetic phenomena, a way to *rotate* a magnetic field. We immediately saw the importance of this, and after developing our method, we finally established these permanent camps at the earth's north and south magnetic poles.

"As any text-book will tell you, earth is a gigantic magnet. Like any other magnet, it has two poles, on one of which we are situated. And naturally, it has lines of force, like those displayed by sprinkling iron filings around a common bar magnet. These lines of force are the *isogonal* lines of the mariner's magnetic chart, by which he guides himself over the trackless seas.

"What does this mean? It means that the entire magnetic field of earth is controllable from its two poles!"

A strange, dreamy look came into the scientist's eyes as he went on—that look that must have infused the face of Faraday, Curie, Rutherford and other pioneers of science.

"My brother and I, thinking that over, decided to try rotating the earth's field. It has taken us two years to transfer our results from the lab-

oratory to the field. From the simple bar magnet to the gigantic earth. But we have succeeded—in a measure.

"There is an identical tower, such as ours outside, at the South Magnetic Pole. When the two are synchronized, earth's magnetic field as a whole is rotated—or, if you prefer—a drag is imposed on it while earth continues rotating beneath it.

"The implications of this are fairly obvious. It is a *longitudinal* rotation, from east to west. Thus, any single spot on earth, during the rotation, is crossed by innumerable lines of force from this planet's great and natural magnetic field.

"Think, then, Fenstrom, of a simple but large coil of conductive wire being crossed by these rotating lines of force. Electrical power! Endless quantities of it! And anywhere on earth's surface where the coils are set up!"

The pilot had forgotten what he was doing and stood with the hot electric soldering iron in his hand. "I see!" he breathed. "And I thought this was all some high-flown research without practical significance! And that magnetic storm—"

"Was our first try-out at rotating earth's field," nodded the professor. "Unfortunately, we lost control and gave the magnetic field such a terrific spin that it was three hours before it lost its momentum under the reversed drag of our tower-grapples.

"The magnetic field, unleashed, produced the phenomenon of *hysteresis* —heat of motion, as in any electric motor. This heat was what caused the violent agitation of earth's weather. Most of it was produced near the ground, all over earth's surface. The heated air arose, cold air rushed in—storms were started. All recording instruments naturally went crazy—barometers, thermometers, hygrometers, etc.

"The compass too went mad because the *isogonal* lines were moving westward and dragging the needle with them. Cloud-lightning was the by-product of an immense release of static electricity. St. Elmo's Fire was an effect of the suddenly ionized air."

Fenstrom was puzzled. "How then will you ever make use of the power resources of the field's rotation, if it will always have those disturbing effects?"

Worry leaped into the little scientist's face. "Earth's magnetic field is a great and powerful agent of energy. It is possible to calculate a certain slow and easy speed of rotation of the field that will not seriously affect earth's meteorological conditions, but will furnish a ransom of power. However, it yet remains to be seen if we can control it. This afternoon we are going to try again, my brother and I, to harness this Titan of energy—"

ALL preparations were completed several hours later.

Fenstrom held his breath. All the world seemed to hold its breath. For the second time in history, earth's magnetic field was to be shaken loose from its age-old moorings, to do the bidding of audacious man. The pilot gingerly grasped the large, ebony-handled throw-switch in the middle of the panel. It seemed to burn his palm. Yet he knew it was only imagination, thinking of the holocaustic forces about to be released.

"Current!" thundered the commanding voice of Dr. John Manning from Antarctica.

Professor Howard Manning's thin arm jerked up in signal and Fenstrom knifed his switch. For a moment he was blinded by the sudden arc of intense violet that resulted. Then he felt a vague stirring within his body, a momentary nausea reminiscent of the time before, when he had been in Montreal. Yet not so strong. Its full effects could not be felt except where the *isogonal* lines of force swept over earth's surface, away from the pole.

In answer to these manipulations of its masters, the mechanical giant outside the laboratory came rapidly

and silently to life. A pulsing current leaped through its whirling copper coil. Rotating in the opposite direction from earth's motion, the magnetic-eddy it produced dragged the force-lines from the pole aside.

At the south pole, the same synchronized process was occurring, and thus the entire magnetic field of earth was being slowly but inexorably turned on its axis.

Out in the world the giant, invisible, whirling field was duplicated, in somewhat lesser degree, the phenomena of that first time. Suddenly warmed air was billowing upward, creating winds. Clouds condensed in descending cold strata and changed to falling water. Thunderbolts of electricity were discharging from cloud to cloud. St. Elmo's Fire spawned out of a superionized atmosphere.

Manmade instruments recorded these things for the wide eyes of bewildered meteorologists, but told them little of the ultimate cause.

But the men who had created these weird miracles knew nothing at first hand of the effects throughout the world. Fenstrom, in fact, was a little disappointed at the unspectacular results of their manipulations. Beyond the slight nausea he had felt and the hum and drone of their apparatus, nothing told him that the predicted result had occurred.

Yet he knew, by the worried satisfaction in Professor Manning's face, that his instruments had informed him of complete success.

"We've done it!" the scientist chortled. "We now have full control!" It was the first time Fenstrom had seen him so jubilant.

Then he leaped to the radio. "John," he said excitedly, "my premonitions were wrong after all. And you were right! What a great day for science—unlimited power for mankind. How could I have been so pessimistic? John, it was you that did this—you should get all the credit—"

"Never mind," boomed the obese scientist from the south pole. "Listen to me, Howard. Now that we have full control of earth's magnetic field, we'll increase the tower-coil's speed to a hundred per minute. They are mechanically capable of withstanding that rate."

"W-WHAT?" stammered the little scientist. "But why? It would be senseless. Besides, the effects would be terrible, out in the world. Speeding up the field's rotation to that rate would bring catastrophe—"

"Would it?" said Dr. John Manning, with a smirk. The voice suddenly became a hiss. "Oh, what a poor little fool you are, Howard! Here we are, you and I, at the North and South Magnetic Poles, with the world between us. And it's ours! I've thought this over since we started this, many times. We can give the world power—at our price! And that price will be—dictatorship!"

"John, what are you saying?" wailed the little scientist. Fenstrom listened with cold fear clutching his heart.

The face in the television screen became fanatically arrogant. The thick lips writhed in cold ruthlessness. "I was meant for such things—rule and power," the voice said sonorously. "Not to be a sniveling philanthropist. I put my brains and life into this project and I want the reward I deserve."

His overweening egotism had discounted his brother's efforts entirely. "I will give them this wealth of power, but first, so they will be less prone to resist my demands, I will demonstrate its destructiveness. At a hundred turns a minute, the world will get a nice, proper scare."

"It's madness!" shrieked Howard Manning. "Thousands of people would be killed—property damaged—there would be holocaust all over earth! John, John! You can't do this mad thing!"

"Never mind moralizing!" snapped the radio voice. "Get ready for the greatest demonstration of man-made power in the history of this planet! Increase rotation ten revolutions in the next minute!"

Professor Manning sprang to the panel board, manipulating the necessary controls. While his hands moved, he whispered hoarsely to Fenstrom.

"You must leave here at once, Fenstrom. My brother has gone insane with the thought of power. I must stop him, regardless of the danger."

"I'll stay here with you, Professor—" began Fenstrom gallantly.

"No, you fool!" hissed the little scientist. He forked a throw switch as the voice of his brother roared "ten more revolutions!" Howard Manning continued.

"You *must* go. First, take out the packet of papers in the top drawer of my desk. They are the complete plans for the tower-coils. Take them with you. Deliver them to the Society for the Advancement of Science. Go now, and for God's sake, *hurry!*"

"What will happen to you—here?" asked Fenstrom.

"Go!" shrieked Manning, with an agonized pleading in his eyes as he pulled down another gleaming switch.

Fenstrom hesitated no longer and ran to the desk at which the professor kept all his notes and papers. He found the fat packet, waved at the scientist's vigorous nod, and dashed out into the bitter coldness outside the laboratory.

A stinging wind made his teeth chatter before he reached his igloo-home. Impelled by a strange haste, he struggled into his parka, grabbed up his thick fur gloves and emerged to stumble through the snow at a lope.

As he passed within a hundred feet of the tower-coil, the men at the oil-pumps stared at him curiously. They little knew that they were under the commands of a ruthless being who would cause the machine they tended to disrupt the peace of the world.

FENSTROM saw the blurring wire-struts of the revolving drum increase their speed even as he watched. Overhead, the most amazing Auroral display he had ever seen filled the dome of night. The streamers and curtains writhed, luridly painted, as though being twisted by some cosmic force.

Somehow, the pilot knew he must hurry more than ever, though he did not know why.

Reaching the ship, he threw himself into the cabin, placing the packet in a wall container. Panting, he pulled the starting switch. With a hollow cough, the powerful motor turned over several times, then burst out into a rumbling roar. He let it warm up only five minutes and taxied into the wind. Soon he was in the air. On sudden impulse he circled the encampment, a vague remorse for deserting the professor stirring his pulses.

He had always liked the little scientist, as much as he had hated his brother. What a contrast, the small, melancholy Howard with a heart of gold and a true humanitarian—and the obese, overbearing, cold-hearted mental machine who by some quirk of fate was his blood brother. They were at cross purposes down below there. What would result?

With a puzzled shake of his head Fenstrom swung the ship southward by his compass and climbed to escape the ground currents. On sudden thought he snapped on his radio and twisted the tuning dial. A voice came out of the crackling of static. The little scientist's high-pitched voice it was, vibrant with emotion.

"—stop you, if it's the last thing I do. In fact, it will be the last thing I do! But what does my life matter—or yours? You're a power-mad egomaniac, John. Earth in your hands would become a shambles. I am going to save you for yourself. You will go down in history as an honored savant, as the co-discoverer of one of science's greatest secrets, for the world will

only know of you as a martyr to our experiments."

There was a pause. Fenstrom's small radio did not pick up the radio voice of the man at the other side of earth. Then Professor Manning's shrill tones once more.

"How will I do it? John, you've forgotten one thing. As you say, if I simply stopped my tower-coil, you would still be able to rotate yours and twist the magnetic field and play hell all over earth. But suppose I *reversed* my tower-coil? As, you see! Think of two unlike polar forces rotating in opposite directions. Earth will not be harmed. The effects will be neutralized. But the final result—to us—"

Another pause. Then a few broken words from the little scientist. "Goodbye, John! I've always loved you as a brother, and still do, though God knows why—"

The radio went dead. Fenstrom shook his head in nervous wonderment and bent over his instruments. He was following the compass needle as its unmarked end pointed south. Something told him to get away, and fast.

Three things happened at once, a minute later. The compass needle suddenly became a blur of swift, revolving motion. Then, out of the corner of his eye he saw a blinding beam dart from the horizon, seemingly from all directions, and spear to the north.

LAST, the most intense pain he had ever experienced ripped through his body as though a thousand needles pierced him from end to end. It was only for an instant but it wrung a sharp cry from his lips, and the ship dipped suddenly from the spasmodic jerk of his hands on the stick.

Pouring perspiration, Fenstrom righted the ship and relaxed with a gasping sigh. Then he jerked up again; realization had come with an icy grip squeezing his heart. That had been a titanic lightning bolt that he had seen before, and it had struck to the north, where a little sad-faced scientist—

Fenstrom spun the ship about crazily, raced back from where he had come. Five minutes later he circled over a jagged, smoking pit that occupied the spot that had once been the encampment. No sign of debris. Some terrific force had ripped everything to atoms.

With an odd ache in his heart, Fenstrom once again turned south with his eye on the compass.

Then he thought he *had* gone mad. The compass needle's marked end, which should have pointed back the way he had come, pointed the way he was going!

An hour later, when there was no change in this phenomenon, Fenstrom admitted to himself that it had happened. The titanic struggle between the two brothers, with reversed magnetic fields, had *switched earth's magnetic poles!*

Earth would marvel, and acclaim the martyrdom of the two who had perished in this destructive reversal of tremendous powers. Fenstrom smiled bitterly to himself, looking at the packet of papers he was to deliver.

He alone knew that only one was a martyr.

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In the rays of MacAvoy's flashlight, Walt could tell that this was no corpse.

The Gentle Brain

By ARTHUR ALLPORT

***Walt Carroll** had his plane waiting to take Leda MacAvoy and her aged grandfather, scientist Joachim MacAvoy, out of the revolution-torn village of Ixtal, but Joachim MacAvoy must stay to complete for those hills a legacy that would forever live!*

OUTSIDE, in the tropic moonlight, a pistol cracked sharply. The sound echoed, with a ghostly clatter, from the slate-grey Sierras behind the village of Ixtal. There was a high, wailing yell of agony, that dropped at last into a moment of strangled silence. Then there were angry shouts, and a fusillade of rifle shots. . . . A stray bullet pinged

dully into the thick wall of Joachim MacAvoy's adobe laboratory. . . .

Old Joachim, thin and bent, his face strangely sainted and confused in the moonglow from the window, wasn't alone in the big room, unlighted now, for safety. His grand-daughter, Leda, was there with him. Leda, red-headed and pretty, and generally prepared for all sorts of rough-and-tumble adventures, was always with him, now that his senses were failing, and his body wasn't as reliable as it once had been.

Walt Carroll, however, had arrived in Ixtal, capital of the tiny Central American republic of San Hernando, just at dusk, a half hour ago. Nobody except himself could quite have understood the fears that had driven him. He'd received Leda's letter two days before. Leda MacAvoy, whom he'd met at a Junior dance at the University of Iowa, four years ago.

"It may seem very odd that I ask you this, Walt," the letter had read. "But if you possibly can, come to Ixtal right away. Grand-dad has succeeded with guinea pigs. Now he's trying the same thing with—*men*. It is all very wonderful, I suppose; but I'm scared, and terribly worried. . . . And the natives are restless. . . ."

So Walt Carroll had demanded immediate leave from his assistant biology professorship at Copeland College. He knew quite a little of the bizarre biological miracles that the wizardry of Joachim MacAvoy was capable of producing. So, cursing luridly in his nervous tension, he had stowed a few essentials into a knapsack. Then he had rented a plane. . . .

RIGHT now, as he heard those bullets crashing out there in the early night, there was nobody in the world that he disliked more than impractical, brilliant, and lovable old Joachim MacAvoy. Walt, with his sun-bleached blond hair, his mild bronzed features and ready grin, wasn't a difficult person to get along with at all, generally; but just at present he was mad clean through—thinking of Leda, and that Ixtal was no place for a girl to be, regardless of whether she was devoted to her grandfather or not.

Walt's sneer was poisonous. "Well, you old fool," he said slowly to the elderly scientist. "It's happened. While you were puttering around here with your crazy experiments and tests, San Hernando has decided to start a nice bloody little revolution. Hatred of foreigners is born and bred into the people here. They're half savage, and now they're all hopped up. Almazan, the revolutionary general, is a former bandit. His men would carve you and me up with the greatest of pleasure—unless they happen to consider you a sorcerer or something, in which case they'll probably figure out a nice, extra-special way of ridding the world of you. But it's Leda I'm really worried about, as you should have been years ago. What do you suppose would happen if some of those apes broke in here, most of them half drunk? And the federals wouldn't be much kinder—with their blood boiling over!"

Walt Carroll stopped there, abruptly, fearful of terifying the girl he loved. He reached out in the semi-darkness. His arm curved protectingly about Leda's slim waist.

"I'm all right, Walt," she said in a calm tone. "But please don't talk quite like that to Grand-dad. I came here on my own. And San Hernando was the best place for Grand-dad's work. It's—secret. Besides he loves primitive peoples. It's he I'm worried about, Walt—and the turn his researches have taken. . . ."

Her words were cut short by another burst of gunfire from the direction of the village plaza. That ugly racket made Walt Carroll see the futility of accusations. His plane was out there in a field at the edge of the village, where he'd had to leave it, unguarded. If somehow they could get to it. . . . But they couldn't now—not with the first fury of revolution

breaking. Maybe later at night it would be possible, when the first madness of revolt against the corrupt Martinez government had quieted a little. But not yet. . . .

Now at last, old Joachim found his tongue. He came into the moonlight, and his eyes were shining. He did not seem so confused any more, or so surprised; but he still seemed half to forget his surroundings.

"I suppose I am a fool, son," he said. "But what has happened has happened. I think that for a short time we can do nothing to influence our futures. So maybe there will be time—and the necessary opportunity—to witness my greatest experiment. I think that you will be impressed. It is a lifework, Walter Carroll. To me it has been more than life. . . ."

FOR a second Walt almost started his bitter denunciations once more, hating the aged scientist's fanaticisms. But in things that seem unnatural there is often a tremendous fascination. The big room held the dark spirit of the MacAvoy researches. Along the walls were hundreds of cages, peopled by thousands of guinea pigs. A few of the animals squeaked sleepily in the sultry gloom. And Walt Carroll shuddered, for from Leda's letters he already knew something of her grandfather's weird achievements.

The scientist turned a flashlight beam on one of the cages. Within it was a guinea pig, its beady eyes glittering in sleepy startlement.

"This is the animal that had no natural birth," MacAvoy explained vibrantly. "It is a male—the absolute average of all the other thousands of males here. You will notice, for instance, that its pelt is a uniform greyish, reddish color, bearing no spots of white or black—because the creature is average. Yes, son, I made this guinea pig—from minute, homogeneously distributed parts of all the other males."

Walt Carroll gasped, startled in spite of himself. But he knew Doctor Joachim MacAvoy's reputation in the world at large. Not so long ago he had been a professor of physics at Columbia University, working on the complicated structures of matter and energy. But his private hobby had been biology, in which he had been probing close to the inner mysteries of life itself. MacAvoy had been winning fame at Columbia, before the pressure of his studies had made him resign.

"It is a kind of surgery, Doctor?" Walt questioned. "A little like grafting an organ of one animal into the body of another? No, it couldn't be quite that. Not if, as you say, there were thousands of animals used in the process—thousands of parts. Too complicated. In some of her letters, Leda mentioned an apparatus you had invented. . . ."

MacAvoy smiled at the younger man's softening toward him, and his apparent interest. "You are right," he said. "I have my original invention here on the table—the one I used with the guinea pigs. Come look at it, and I shall try to explain its principle."

The scientist had turned the beam of his flashlight on the device on the table. Externally it was of wood—a round box fitted with power leads from storage batteries. There was an entrance and an exit, through which the guinea pigs might be put. Now MacAvoy lifted the lid of the whole apparatus. Within was thus exposed a runway or passage, flanked on either side with heavy carbon plates or electrodes, connected with an intricate electrical mechanism. Along the top of the lid, where it would exactly traverse the length of the runway when the lid was down, was a perforated copper tube, leading to a little rectangular vat, filled with a jelly-like fluid.

"HERE, in this apparatus," MacAvoy said in a low, intense tone, "I have combined the latest discoveries of physics with the latest discoveries in biology. Matter and

energy have long been known to be different forms of the same thing. Ten years ago, in 1947, Armand Kent, experimenting in Texas, succeeded in slowly changing the substance of small objects into something halfway between matter and energy. As a stream of specialized atomic ions, it could be made to flow for a short distance along the surface of a metal conductor. And, with the aid of a properly designed receiver, this matter-energy plasma could be slowly made to assume its original, solid form. The structure pattern of that form, lay in the atoms. Thus, in perhaps a week's time, small objects could be transmitted for a few feet. Nails, metal buttons, and the like.

"Kent could go no further than this, but I took the study up where he left off. I improved his system considerably, and I shifted my attention from inorganic objects to living things. This apparatus here, and that guinea pig I showed you, are part of the result. I passed the thousands of male guinea pigs—it would have been the same with females—through the runway, one by one. And in the field of the electrodes flanking the runway, a tiny fraction of the cells—the body substance—of each animal, was converted into an ionic stream, which flowed along the surface of this connecting copper tube to the little vat, here. In the fluid the vat contains, warmed then to blood temperature and charged with food chemicals and life-sustaining oxygen, the stream of specialized ions was coverted back to its original living form—cells—just as were Kent's nails and buttons.

"A little, only, from each animal—one cell in several thousand—brain, bone, muscle, blood. A kind of complete sample of each creature—looking like a carefully divided pink cobweb, representing completely, every organ and every member. Head, viscera, skeleton, fur. It was something beautiful to see, Walter Carroll. Here in this little vat, which is part of my apparatus. One guinea pig, then another and another, the sample provided by each, combining and meshing with the samples that had come before—gradually building up a complete animal.

"Oh, it sounds easy, I suppose; but it was not. I made hundreds of trials, both with males and females, before I produced the one creature there in the cage. It was the only one that lived. The cell samples, kept alive in as near a perfect culture solution as I could produce, grew together properly. And the animal survived to breathe its own air, and to act like any guinea pig of normal origin."

Walt Carroll felt a little dizzy with wonder, as the old scientist finished his explanation. But it wasn't so unbelievable after all. Yes, it was a little like familiar skin grafting. . . . Except that it was much more complex, and was accomplished by means of the principles of atomic science that Armand Kent had discovered. Walt remembered the fragment of a chicken's heart that Alexis Carvel had kept alive in a bottle of saline solution for years, long ago.

"And the donors," he muttered oddly. "The guinea pigs that provided the samples of flesh and brain. They'd continue to live all right, wouldn't they. Doctor? One cell in thousands. It couldn't matter, even if the process was repeated many times. Maybe they'd feel a bit sore for a day or two. . . ."

"Yes," MacAvoy replied.

A FRESH rattle of heavy gunfire from across Ixtal, sprawling there in the night, brought Walt back to reality. He leaped to close and bar the heavy door that led into the street, and to draw in and fasten the massive wooden blinds of the windows. And Leda was helping him bravely.

"We'll go to the tower room, Walt," she whispered. "Grand-dad's *man* is there. And it's the safest place in the house. A regular little fortress. I made Grand-dad fix it so it would be

strong, and hard to find. Up that ladder, Walt. . . ."

The sounds of battle were coming nearer, along Calle Santa Maria, which passed the house. Walt gritted his teeth, as he helped the unsteady old man, and the girl he loved, climb the rickety ladder which led to a door artfully concealed among dusty rafters.

They reached the tower room, pulled the ladder up after them, and bolted the entrance. The moonlight in the round chamber was haunting and mysterious. The approaching clatter of musketry made Walt's flesh tingle. But there were other reasons. At the center of the floor, supported on a frame that was like a bier, was a casket-like object. A burnished cylinder of copper led to it, and its top, partly covered by a sliding panel, was of glass. Near the casket was much small machinery and equipment.

"Here it is, Walt," Leda said in a soft, choked tone. "The man—the human being—made just as that guinea pig was made."

Walt was standing beside the casket, now. Beneath its partly exposed glass cover, a face and bare shoulders were visible. A man, asleep. His features, sullen, like those of an old Aztec, were broad and brown and composed. A viscous, transparent fluid covered them, and the eyelids were closed. But in the rays of Joachim MacAvoy's flashlight, Walt could tell that this was no corpse. The cheeks twitched a trifle, in plain evidence of life. That sleeping body was like an embryo—an unborn animal—growing artificially. It did not need to breathe with its own lungs, or eat with its stomach, for oxygen and food were supplied by the fluid that encased it.

"This is my greatest achievement," Joachim MacAvoy breathed lovingly. "You will notice, son, that there is a certain transparency to his skin. He is not quite—complete. Yes, he was built up exactly as was that guinea pig—from parts of two thousand men—a detachment of the federal army. If there were a few hundred more, he would be—entire. I think we shall soon have the means to make him whole. . . ."

Walt guessed vaguely what the old scientist referred to. The shouts and cries and gunfire were still nearer now. The battling men were coming along the street—along Calle Santa Maria.

But how did MacAvoy propose to do what his speech hinted—taking the needed body cells from them? Walt looked out on the narrow tower embrasure that fronted on the street. Part of the latter was roofed over by a broad archway—making what was really a short tunnel. Walt had a vague premonition then, and Leda confirmed it.

"They are out there in the arch," she whispered. "The electrodes, I mean. And beneath the pavement there too, Walt. Just as in the apparatus for the guinea pigs, which you saw downstairs. A bunch of Martinez' soldiers marched past the house here, several days ago. They had to march under the arch, and you can see what happened. The power was on in the electrodes, and I guess the soldiers must have felt a little funny—but they didn't even break step. You'll see for yourself in just a minute, though, I think. . . ."

A strain was in Leda MacAvoy's beautiful face. Her eyes were frightened in the moonglow, maybe because of horror at her grandfather's daring applications of science. Or maybe she was nervous more because of the battling tangle of armed men approaching along the street—federal guards in tattered khaki being pushed back by a motley mob of revolutionists.

WALT clutched his pistol with a firm hand. The rank reek of powder was in the cool night air, mixed with the odors of dust and sweat and blood—and wistaria blossoms. The sounds and the flashes of weapons,

mingled in a dazing medley. Lurid Spanish curses, sharpened by expletives of native Indian origin, flowed in the moonlight. Chilled by the blood-cries, and the death out there, and the knowledge that he and his companions might soon be prey of a maddened pack, Walt Carroll pulled the girl farther from the embrasure.

His own gaze, however, stayed glued to the street, except for one moment when it wavered back to Joachim MacAvoy beside the casket that contained his creation. MacAvoy's withered old hands had moved a control on a switchboard that fronted shelved rows of storage batteries along the wall. There was no startling result except a reddish glow under the glass cover of the casket.

Quickly, then, Walt turned his eyes back to the embrasure. He watched the archway below like a hypnotized mannikin, as the tattered and fleeing federals tumbled under it, and after a moment, passed beyond. He could see them there in the moonlight at the other side of the arch—vague startlement in their faces. It was startlement that had nothing to do with the bullets and imprecations that were shot and hurled after them. But this was the only sign of MacAvoy's wizardry working out there. After the soldiers came the revolutionists, in civilian garb. Some of them went under the archway too. . . .

But at last Walt and the girl had both turned their attention back to the glass-covered casket. Within it, electrodes glowed with a cold red light, illuminating the face and the shoulders of the man lying there. There was a foggy haze about his features—evidence of the forces acting. And his skin swiftly lost its unfinished transparency, becoming completely natural, as stolen body cells, converted into an ionic stream and back again, filled in solid flesh. After a minute MacAvoy turned off the power, and the red glow disappeared.

Walt hardly heard the heavy thumping at the door and shutters below; for so deep was his wonder at this unholy marvel that for a second he forgot.

"Grand-dad!" Leda burst out tensely. "The revolutionists are trying to break into our house. They know we're foreigners!"

The old man looked about with fuddled uncertainty. "What do they have to try to interrupt me now for, Leda?" he said vaguely. "Just when I'm at the peak of things! They are so strange—these people of San Hernando. Hospitable, gentle, cruel, and simple! I'll have to talk to them. . . ."

White haired Joachim MacAvoy made as if to move toward the door.

Walt caught his arm. The young biologist didn't really get angry this time. Because he pitied the impractical old man too much. A genius, yet in some ways as naïve as a child.

BELOW the battering at the door and windows was intensified. If MacAvoy so much as showed himself, that maddened mob, excited beyond reasoning now, would almost surely shoot him down instantly. As for the girl—well—Walt trembled, and his stomach felt a little sick. . . .

He looked out of another fortress-like embrasure—one that gave onto a tile roof. This was maybe a good avenue of escape, but not yet. Not with that howling pack out there. If they broke into the house, maybe they wouldn't find the tower room. Maybe they'd go away eventually. And then—

"Don't try anything risky, Doctor," Walt cautioned in a whisper. "Let's just continue with the experiment. What happens next?"

Walt thought he made this suggestion to steady things—to quiet the nerves of his companions. To make believe that they weren't in danger. But was he defeating his own purpose? This sleeping man in the casket was something unnatural and eerie—a monster of science—terrifying in itself. And yet fascinating

beyond measure, too. Perhaps Walter Carroll was gripped and held by the weirdness of it all, even now. . . .

Under splintering blows from machetes and axes, the door on the ground floor of the laboratory crashed from its hinges at last. There were sounds of running, stumbling feet in the room below, and coarse cries of triumph at the entry.

But Walt clutched Leda's hand reassuringly, and said—"Go ahead with the work, Doctor," to her grandfather.

The old scientist cast fearful, comprehending glances around the tower room; then took a firmer hold on himself. "It is really too early to awaken the subject," he said unsteadily. "He should be allowed to rest quietly for several days, to permit those latest cells added to his body to knit—to heal themselves together — firmly. They are healthy cells, of course—I contrived to take them from vigorous fighting men so that they would be healthy. Still, there is danger—grave danger—even under the best of circumstances. But I suppose that there is no time for delay now. . . ."

MacAvoy's fingers touched a lever. A small electric pump made an almost inaudible sucking sound. The jelly-like fluid was drawn from the casket, to the accompaniment of gas hissing in entry—pure, stimulating oxygen, released from metal flasks in which it was compressed.

In five minutes the change was accomplished. Soon afterwards the man beneath the glass—the man who was made of cells taken from thousands of other men—began to breathe noticeably. But it would be long before he awakened—if he did awaken at all. Meanwhile the noises of the laboratory rooms below being ransacked for valuables, and torn into disordered ruin, continued, falling at last into an ominous deserted silence, which still bore a brooding threat. The pack of human wolves had retreated boisterously, but the din of revolution in Ixtal still continued. . . .

It was almost an hour before MacAvoy's creation opened his eyes slowly and painfully. In dazed wonder he looked around the tower room, through the glass of the lid over his face. It was strange and bizarre, this awakening. What was this human being, whose brain was composed of parts of the brains of many separate individuals, thinking? What was the answer? For the moment this question drew the attention of the three watchers entirely away from their own danger here in disordered Ixtal.

Joachim MacAvoy lifted the head section of the casket's glass cover. He regarded the brown face of the man lying there for several seconds without speaking, holding the flashlight away from his eyes.

"Como se llama?" he said gently at last. "What is your name?"

The broad features of the one thus addressed, twisted a little, as if in pain, as he tried to remember. . . He was breathing heavily and laboredly, and his hand went with a slow trembling gesture across his eyes. . . .

"Es perdida—lost," he whispered finally. *"No me auda iben esta—cabeza.* . . . My head—it does not work properly, Señor. . . ."

"Adonde esta su casa?" MacAvoy questioned. "Where is your home?"

Again there was a short halt, but finally the response was given: ". . . . *Entre las colinas, Señor.* . . . Among the hills. . . . ."

MacAvoy nodded, as he glanced up at Leda and Walt. "Just as I predicted," he told them. "He speaks Spanish, like the individuals from whom he was made. A few of the brain cells of each, containing in composite their almost identical speech memories. But hardly enough cells were taken from any one individual's brain to affect that individual's memory in the slightest. . . . . Still, he remembers no personal identity—no exact name for himself. Probably, here, he is confused by many names. But he knows he is from the hill country. The federal soldiers that sup-

plied his flesh and brain, were almost all of that origin. However, if we asked him to tell us some of the incidents of his boyhood, he would be confused by many conflicting impressions, almost too faint to reach. He would recall very dimly many people, many parents, many houses. . . . ."

The scientist looked back at his subject. Those dark eyes were shut again, now. A pallor was creeping through the coppery skin. The shoulders gave a brief convulsive jerk. The heavy lip dropped and there was a ragged sigh. . . . . And the test-tube man moved no more. This was death, after only a few brief minutes of waking life.

MacAvoy shrugged, but in this gesture there was a world of defeat. "As I told you, it was too soon," he said. "There was really no chance for him to live. . . . . ."

Suddenly Leda was sobbing. Walt knew why, for he felt it himself. That long, straining tension of danger, and of mystery. A scientific miracle, too —bringing a human creature weirdly into life, and then letting him die. A black, strange wonder that seemed without a purpose. Walt held Leda to him, protectingly.

"What's it all for, Doctor?" he said to the old man. "It is marvelous, of course—what you've accomplished. But what's it for—what can it achieve?"

MacAvoy shook his head. "Don't ask that, son," he returned. "Though I suppose there are many answers. . . . Science explores, learning what it can do with nature first, and finding reasons afterwards. Sometimes it probably runs into blind alleys. We can't always say. But, for example, a man like this, or a woman, might represent politically all the men or women in a great nation like the United States. Yes, political representation, not by crude election at the polls, but by individuals who were the flesh and blood and thoughts and feelings of that nation's inhabitants —being actually created from them. And there might be applications to surgery. You can never know. . . ."

Walt felt and understood most all of this; but his one desire now was to get away from this place of ghastly birth and sudden death.

"Leda—" he whispered.

YES," she choked. "I know. All of us — quick — out of here! I've had enough! We can climb out of that embrasure there—the one leading to the roof. And we can drop into the back street. There's probably someone waiting and watching downstairs yet, though it's quiet there. . . . "

"She's r i g h t, Doctor!" W a l t snapped. "Listen! It's comparatively quiet out in the village, too, now. We'll probably never have a better chance to try to get to my plane. If we don't succeed with that, we're much safer hiding out in the open country. You know what you told me when I arrived—that Almazan, the rebel general himself, is marching toward Ixtal with ten thousand men. It would be bad to be here when he arrives. . . . "

Joachim MacAvoy looked at the young man briefly, as if studying him, and calculating with a depth of comprehension that no one but himself would ever be able to see.

"You go, son," the scientist said after a moment. "Take Leda with you. I'll stay here. My place is close to my work—to the last. And I love these strange, half-savage people of San Hernando. Besides, I'm old. I'd only hamper you by being slow. Endanger Leda unnecessarily. Perhaps I'll be able to join you, someway, later. Now hurry up—out of that embrasure!"

"Grand-dad!" Leda burst out anguishedly. "You know I couldn't leave you!"

"You will, though," MacAvoy returned with an odd, wild firmness. "Because it is the only reasonable thing to do!"

Walt saw at once that there was no

use arguing. He made a step forward, his fist clenched, intending to knock the old man out, and carry him away quietly.

But MacAvoy sensed his intention. His back was against the brass-studded door. His fingers closed on the heavy bar. There was a ring glinting on one of those fingers—a massive onyx signet. A shaft of moonlight touched the old man's withered face and his pale eyes, then. He looked more like a saint than ever, except that his lips were pursed with a startling and immovable determination.

"No, son," he said very quietly. "You won't do anything stupid. I have reasons for wanting to remain here, now—definite reasons. And I hope that you will be sensible enough not to interfere with something that you cannot understand. Leda's the most important. Get her out of here! Get her as far toward safety as you can. Now hurry up!"

Joachim MacAvoy's attitude seemed wild and fanatical. Yet in that swift, firm order, somehow, Walt found a new and different respect for the aged wizard.

Walt didn't ask any questions, and he didn't say anything to the girl. He just picked her up and rushed to that narrow, slitted window that overlooked the roof. She struggled and whimpered protests at first, but he held her firmly, whispering "Quiet!" with a sharp emphasis that didn't encourage back talk.

He lifted her out onto the tile roof, and followed. The din and shouts and cries of battle were distant and muffled here, behind the buildings. Walt dropped to a narrow alley from the eaves, and ordered Leda to lower herself toward him. Standing there in the shadow-flanked, moonlit passage between ramshackled structures, he caught her in his arms. The street here on this side of the laboratory, was deserted. They raced down it together, the sounds of disorder and fighting in the town, receding behind them, blocked off by high adobe walls.

AHEAD in a field, visible above the hovel tops because it was on a rising slope, Walt's plane squatted. It looked as though they might even be able to reach it, with a little stealth and strategy. There'd probably be a guard—a rebel guard—over the plane, now—hidden somewhere in the shadows. But that was to be expected. Walt clutched a cocked pistol as he ran—ready.

Yet in those irregular, goat-path streets of Ixtal, there was abundant opportunity for ambuscade. No one could tell who watched from the barred, darkened windows. . . .

Suddenly, behind and before Walt and Leda as they fled, there were footsteps, closing in. Someone fired a pistol, and someone cursed the man who did it. Then there was a rush from both sides. Walt drew Leda back against a wall, and fired into the snarling, cursing pack until his weapon was empty. After that he had only his fists, at close quarters. Perhaps a score of stringy, sun-hardened rebels were on him. He tried to keep Leda behind him as he struck out at them fiercely, with all the strength and agility of his lithe young body.

But the avalanche rolled over him at last. Battered with pistols and clubs, he went down under a tangle of odorous, maddened bodies. Leda's scream, as rough hands clutched her, made him struggle with every ounce of his determination, to cling to consciousness and to keep fighting. But it was useless. Blackness rolled into his brain.

It was near sunrise when he regained his senses. He was lying on the floor of a crude hut made of brushwood and rusty sheet iron. A fire burned at the center of the floor.

He tried to turn, looking for Leda. Thus he discovered that his numbed arms and legs were securely bound. But Leda was there beside him, securely bound too. Her dress was torn, and her auburn hair was dishevelled; but her eyes were dry and brave.

"Leda!" Walt called softly.

Walt didn't really have much to say to her, except that he loved her—if that was any help or reassurance now.

THERE was a guard at the doorway with a rifle. He had little narrow eyes and a greasy face. A bandolier of cartridges was over his shoulder—across a dingy, civilian coat. A revolutionist.

Leda had turned her face toward Walt. She was trying to smile. Her cheeks were pale and grimed, and her face was wistful with worry and fatigue. But she was so tragically and achingly beautiful there in the firelight. . . .

"I love you too, Walt," she said. "So very, very much. . . ."

The guard entered then. "Ah, the little *Americana* talks at last," he crooned in English. "And the *caballero* also. General Almazan shall be very pleased. He admires beauty. In an hour he shall be here in Ixtal. Already the President Martinez has run from San Hernando like a rabbit!"

The guard was leering wickedly and significantly down at Leda.

Almazan! The ex-bandit chieftain! Walt Carroll's flesh crawled as he thought of the girl he worshipped. This general of the rebels would stop at nothing. Walt growled an imprecation, helpless and defiant.

The guard came toward him then, sneering evilly. A booted toe crashed into Walt's spine—once, twice, three times. In dizzy sickness, he fainted.

But after a brief time he came to again, battered and aching. The guard was back at his post at the doorway. With pulses pounding in his head Walt strained at his bonds, but they were tight and strong. He tried to think of a plan to free the girl, but what was there to do, now? His every move was watched. Forlornly he thought of bribery—an offer of ransom when Almazan arrived. Friends would raise money for him in the States. But what good would it be? Almazan was master, now. He would do what he pleased. . . .

Walt wondered, too, what had happened to old Joachim MacAvoy, left there in the tower room of his laboratory. For a moment Walt thought he saw a ray of hope. The scientist had developed an apparatus that dissolved body cells. That meant that it could kill, didn't it, if the apparatus' action were continued long enough? But Walt quickly saw the futility of his hope, here. No one would be foolish enough to stay in the path of such forces for very long, after he had felt their danger. And even if MacAvoy could adapt his apparatus soon enough to a new purpose, killing even hundreds of rebels, what good would that accomplish? It would only stir up anger.

It was getting light outside Walt's and Leda's prison hut. Ixtal's cathedral spires and fort, and sprawling hovels, were beginning to show up greyly against the mountain scene. The air was chilly. . . .

Had Almazan arrived in the village yet? It seemed a very long time. But there was a hubub in Ixtal. No shots were fired, but in the dawn stillness the murmurings of voices and shouts could carry for miles. Some kind of confusion was in progress. Soldiers were perhaps seeking quarters. . . .

Finally, along the road leading out of the village, a small dusty detachment of men appeared. At the head of the short column a motorcycle with a side-car moved slowly. The man in the side-car would be Almazan. Walt tried to edge himself a little nearer to wide-eyed Leda, helpless there beside the ashes and hot coals of the fire. They didn't say anything to each other. It was best not to incense the guard.

There was a rattle of pebbles outside, and the pant of a motor stopping. Greetings were exchanged. . . . After a moment the guard stepped respectfully back from the hut entrance.

A BIG, gaudily dressed form shadowed the door. Almazan, resplendent in a white uniform spangled with medals, came forward toward his prisoners with mincing steps. He was a heavy-set man with fat jowls and the coppery skin of the Indian, for his Spanish blood was scant. He was smooth-shaven except for a tiny, pointed moustache.

He surveyed his captives for a moment, his jaws and cheeks working. Walt Carroll saw that Almazan was thinking carefully and unfathomably, and his heart sank. . . .

"Release them," the rebel general said at last to the guard.

Obediently the latter came forward and cut Leda's and Walt's bonds with his knife. But both were too numbed to rise or stand.

Almazan opened a plump palm. Within lay a ring with an onyx setting bearing the initials, J. M. The general held it down so that Leda and Walt could see. . . .

"Do you recognize this?" Almazan enquired. His English was almost perfect.

Walt growled, and Leda stared.

"Why, that's Grandfather's signet!" the girl burst out frantically. "J. M.—Joachim MacAvoy. You've killed him! You must have! And now you've come here to taunt us!" Leda's voice was vibrant with contempt and grief. . . .

Almazan rocked on his toes. There was confusion in his heavy face. And wonder and awe. Suddenly he looked cowed and sheepish.

"No, *Señorita,*" he returned finally. "You do not understand at all. Believe me, I am sincere. It is very strange, indeed. We came into Ixtal this morning by way of Calle Santa Maria, since it is on the main road. We passed Joachim MacAvoy's house and laboratory—I and my army of ten thousand men. You remember the long archway there before the house—the sunshade of what was once a market? When I went under the arch, something happened to me. It was as though a very small voice was speaking in my mind. At first I scarcely noticed, but then after I had passed the house I talked with my comrades. They had felt, and still felt, the same as did I. We had all of us been touched by—what should I say?—a lesson perhaps, a teaching.

"I had never met Joachim MacAvoy. But I had heard some of his ideas. I had heard of his gentleness. I had thought him a fool. But now it was all very different. I saw that I had been very wicked—that all of us had been so. Even President Martinez before me. And in wishing to express my thanks, I went back to your grandfather's house, *Señorita,* with a detachment of my troops. The place had been ransacked. But from the street I saw the little tower, and somehow I knew that in it were the answers to many things. . . . "

"And what did you find there?" Walt Carroll cut in anxiously. "Tell us—quick!"

ALMAZAN looked at the young biologist with hooked eyes. "Be patient," he said. "We found the tower door at last. I climbed to it on the shoulders of my men. I pried away the hinges. Within the tower room I found much machinery. There was the naked body of an unknown man on the floor. Beside it were Joachim MacAvoy's clothes in a little heap. And in the casket at the center of the chamber, there was nothing but fluid, and this signet ring. Joachim MacAvoy was nowhere to be found. I am sure I understand, though, what happened. For the answer, somehow, has become a part of my mind. I think Joachim MacAvoy is dead—unless, really, he lives in our hearts—the hero of San Hernando. He was a great and wise and kind man—a true scientist. . . . "

The rebel general's voice quavered a trifle at the end. Walt and Leda had half risen from the floor of the hut. They looked at each other, and they looked back at Almazan, as the ter-

rific truth struck into their minds. They both knew enough of Joachim MacAvoy's experiments to realize what he had done. He had known that Almazan's army was coming, and that it would march along Calle Santa Maria, past his house, and under the archway where his electrodes were concealed.

"Grand-dad—he reversed the process!" Leda burst out. "It would be easy—just a matter of changing a few connections!"

Walt only nodded, with a strange, deep awe. He could picture in his mind just what had happened. Waiting until he had heard Almazan's army approaching, MacAvoy had set his apparatus in motion—in reverse. He had climbed into the casket and closed the lid. Slowly his living body had faded—dissolved into specialized ions—its substance to be transferred to the flesh and brain and nerve of Almazan and his rebels. Only his signet ring had remained in the casket, for the process had evidently not been adjusted to include metallic objects. And with MacAvoy's divided brain had gone the gentle yet dominating benignance of an old saint. . . . There would be no misrule, now, in San Hernando, for truly Joachim MacAvoy lived in the hearts of the strongest of its men. . . .

"You are free, of course," Almazan was saying to Leda and Walt. "I am sorry, but I will do all I can to make amends. There will be a funeral feast in honor of a great hero. . . . "

The general was giving orders, now, to his henchmen—orders to get a car and warm clothing for his guests, and to take them to the fort. . . .

But Leda MacAvoy and Walter Carroll hardly heard. The girl was in Walt's arms, sobbing partly with grief and partly with joy.

"It's not ended yet, Leda," Walt was saying. "Because when we fly back to the States, we'll take your Grand-dad's apparatus with us. I think it may have many uses beyond what has just happened. Aids to surgery. Restoring diseased or injured bodies, perhaps. We thought it was a pretty ghastly science at first, didn't we? But who knows? . . . "

THE SECRET OF THE

SHIELD REVEALED !!!

IN

SHIELD-WIZARD COMICS

WATCH FOR IT AT YOUR NEWSSTAND

Life Inside a Wall

By HARL VINCENT

A wonderful invention was that new machine of Harry Skouras—everything looks rosy—until his first subject disappears entirely!

NO one had to tell me I'd be razzed unmercifully about that black eye. One look in my dresser mirror through the one good optic was all I needed. The uncooked steak I'd put on it the night before hadn't done a particle of good. I had a real honest-to-goodness training-camp shiner and I'd have to take my ribbing. This bum looker of mine was about the size and color of an over-ripe prune. The consistency, too.

I was just starting a new week—had finished my two days' leave—and the Liberty Telecasting Co., would probably have to go out of business if I wasn't there. Or I would.

That made it all the worse—the two days' leave. The gang in the studios would think I'd been on a binge, which I hadn't, of course. I stopped in the corner drug store for a black patch. That would do at least for the subway ride. Seeing it, people might even feel sorry for me.

"Run into a lamp post, Mr. Skouras?" grinned Julius the druggist.

"A truckload of pipe," I tried to grin back. The effort hurt the whole side of my face.

Julius helped me tie the shoe-lace affair back of my head. I pretended I felt better.

At Television City it began. I removed the patch and stuffed it in my pocket before entering the building. There was no one I knew on the elevator except Joe, the operator.

"Get hit with a golf ball, Harry?" he called after me just before his door slid back to close him off. I couldn't answer.

If there had only been some way I could avoid going into the master control room. In any of the studio control rooms you were usually alone or with only a production man to kid you. Out there under the blinding lights of the stage, sashaying around in front of the lens of the ike and emoting for the benefit of the mike overhead, the actors couldn't see into your cubby through the glass. But I had to check in first at master control and see what my schedule was for the day. And half of the engineers of the studio group were in there. I tried to act nonchalant when I breezed in to sign up.

"Sidewalk fly up and hit you?" cackled Dave Edwards.

"What does the other guy look like?" Chubby Wallace contributed.

Irish Maher put in his oar with:

"Why don't you pay your bar tabs?"

There was lots more like that. You just couldn't laugh it off. I took a look at the schedule with my one eye and saw I wasn't on the air for a half hour in studio 8-H. And here was where I'd have to hang around. It was up to me to do the talking.

"Look here, you birds," I told them. "You may think it's funny now, but you won't when I tell you about it."

"Yeah," cracked Irish. "How there was only two blows, him hitting you and you hitting the floor?"

"No," I insisted, meaning it. "Nobody ever tells the truth about a blue eye, do they? The answer is, no. But I'm going to. You'll hardly believe it when I tell you, but it's gospel."

"Take long?" asked Chubby, with his fat-faced leer.

"It's a long story," I assured him, looking at the clock. "But a good one."

CHUBBY had to listen whether he liked it or not; he'd owed me a sawbuck for a month and was stalling me off every payday. And Irish had a half hour to kill, too. Besides, telling them was the only way I knew of shutting them up.

"I guess I never told you fellows," I began, "that I've been doing some experimenting of my own at home."

"It looks like you been doing something," Chubby put in.

"Lay off," I said. "I'm trying to tell you about it. Well, you know what they're doing upstairs here in the lab—playing around with two ikes and a double-tube receiver, trying to perfect stereo television?"

Irish and Chubby nodded. I could see I had them interested.

"Well, that's what gave me my idea of three-dimensional transmission. Only I'd been already fooling around with radio transmission of matter for a long time and wasn't interested in anything like sound or pictures. I only got the idea of the three dimension scanner from this stereo business. You see a solid body has three dimensions, not two like the ordinary flickers."

"Cut out the lecture and get down to the story," grunted Irish. I could see he thought I was beefing him.

"What I'm getting at," I said, "is that I doped out a scanner after thinking about it a while—a three-dimension scanner that combines an x-ray with the forces that break down matter into its component subatomic particles. It works just like our iconoscopes, in a way. Only instead of a cathode ray jumping back and forth under the impulses of magnets which make it scan the 441 lines on the signal plate, my x-ray shoots back and forth, up and down and *in and out* of an object. And instead of picking up light and dark spots to make more or less electrons fly off from the tiny silver globules on the caesium oxide-coated plate, my ray actually knocks particles of matter apart and leaves them as just energy charges. And, the same as in the regular television ike, these changes are sent out in exactly the order they were picked up. They can be reassembled by a receiver in the same way, too."

Chubby jumped out of his chair as if he'd been shot. He picked up an empty inkwell and banged it on the desk. "Mean to tell me," he demanded, "you can put this in your jumping-jack ray and make it vanish in a transmitter and reappear somewhere else in some sort of receiver?"

"I can," I told him. "And, if you don't believe me, I'll show you some time. It's simple enough, if you think about it."

"Yeah," said Chubby. "What kind of energy do you put on this trick jitterbug x-ray to break down the atoms into just energy charges?"

"That's my secret. I haven't put in my patent application yet."

"What's this got to do with the blue eye?" Irish yawned.

"I'm coming to that," I went on. "When I finally got my apparatus working, I started with things like my pocket knife and a can opener and a pair of dice. They all went through fine. I could put them on the transmitter table, scan-disintegrate them, and they'd reintegrate right before my eyes on the receiver table. Then I tried fruit—and ate afterward. So naturally I began to think about sending animals."

"Now, wait a minute," Irish interrupted. "I may be a sucker, but not for that. Don't sit here and tell us you can send a live animal by radio waves and keep it alive!"

"I do tell you that," I insisted. "And I wish you'd keep your trap shut till I finish. As I say, I tried animals. First, without her knowing it, Mrs. Sokolowsky's cat. She's my landlady up in the Bronx, where I live. Anyway, the cat came back out of nothing okay. So I tried a little fuzzy dog

that belongs to the janitor. He went through okay, too. And my neighbor's parrot, who kept hollering a lot about 'pieces of eight' or something. After that, I began thinking of sending a human being. If it didn't hurt dumb animals, it hadn't ought to hurt humans, dumb or not."

"Where to get a subject? I knew better than to ask any of you birds. You'd just naturally be yellow."

"Oh, yeah?" sneered Chubby. "How come you didn't try it yourself? One of us'd been glad to operate your gadget—if there is such a thing."

"There is," I assured him. "And I wouldn't trust any of you to run my apparatus anyway. So I advertised for someone. Offered twenty dollars for an hour's work and no questions."

"Where'd you get twenty dollars?"

"I was counting on ten from Chubby," I back-cracked. "Anyway, I'm not like you birds; I save some of my money. Well, a guy showed up in the small hours Saturday morning. A big guy, and he was sitting on the floor in front of my door when I went out for the milk. That was long before the mob came."

"What mob?" asked Chubby.

"Why, the thousand or so that answered my ad," I enlightened him. "It took a half-dozen cops to get rid of them after I told them I'd hired this guy Pizzaro."

"So one of the cops hung the shanty on you?" chirped Irish.

I REFUSED to be diverted or even annoyed. "No," I denied. "As I say, I hired this big lad Pizzaro and told him to come around Sunday at noon. He was half starved, poor devil, and said his wife was too. So I told him to bring her along on Sunday and I'd give them both a feed besides the twenty dollars. Meanwhile, I got hold of Mrs. Sokolowsky's cat again and showed him just what I wanted to try on him. His eyes nearly popped out of his head when he saw the cat curled up on the one platform one second and the next second standing on the other across the room with her back arched and the fur on her tail about six inches in diameter. He said he was game to try it. Wanted to do it right then and get the twenty. But I explained that I had to move the receiver into the next room because it had to have a bigger table on account of his size. That was all right with him.

"Luckily, the next room wasn't rented, so, for a dollar, I managed to get the landlady to let me use it for one day. And for another two bits her pride and joy, little Ichabod Sokolowsky, helped me move over my equipment. I was tempted to test it right then with young Ichabod but didn't have the nerve. I saw Ma Sokolowsky knock a roomer down three flights of stairs, once."

"She give him a black eye, too?" asked Irish.

I only glared at this. "Well, this Pizzaro showed up on Sunday, all right. That was yesterday, of course. And he had his wife with him. She was as cute a little black-eyed, black-haired snappy package as you ever saw."

"So I said we'd might as well get right down to business. And this Rosie Pizzaro wanted to see the twenty first. So I gave it to her to hold and she tucked it down her stocking.

"Well, I got everything all set. Tuned the transmitter and the receiver to a hair and tried it out with a screwdriver handle I had there. You should have seen little Rosie's eyes pop when she ran to the other room with us and saw it on the table under the tubes over there.

"Anyway, I knew everything was all right. So I made Pizzaro sit on the table. He was too damn big to stand up under the scanner and the dis tube. He grinned like a big ape sitting there. Rosie's lips were mighty red and kind of pouty, and her cheeks were just like her name when I turned on the juice. *Then* her eyes got like saucers. Her Tony just sort of glowed and shimmered for an instant and then he was gone. The girl and

I went galloping into the next room. He wasn't there!"

"Wasn't there!" howled Irish and Chubby in chorus.

"No, he wasn't on the receiving table," I told them slowly, to let it sink in.

"So then the girl gave you the shiner?" Chubby asked sympathetically.

"No, she didn't," I d e n i e d. "Though, for a minute, I was afraid of what she might do. She began screeching so for her Tony that I was nervous about Mrs. Sokolowsky hearing it and getting on the war-path. I was pretty nervous about Tony, too.

"I hadn't done a whole lot of thinking, and that without result, when Rosie cocked her head to one side and said: 'You hear something, no?' I listened and I kind of felt my hair rise up as a whispering came to my ears.

" 'Yes, I do hear something,' I told the girl, to keep her quiet. 'I told you he was right here and I'd get him back, didn't I?' The girl was almost satisfied for a while. But, as I thought and thought and couldn't get an idea, she began to cry again.

"Then, in a couple of minutes, there was a sound like cussing around. I got up and closed the door—just in time, too, for Rosie let out a sudden yell that would surely have drifted down to the sharp ears of Mrs. Sokolowsky. 'What's wrong?' I asked the girl. 'In here,' she yelps, pounding the wall. 'My Tony's insida da wall. You geta heem out queeck, no?' I told her I would, but it might take a few minutes. I knew then what had happened. Pizzaro'd been caught. How he could make his presence heard, or rather felt, I couldn't figure out and never will. But that's the way it stood. And I couldn't figure out how I was to get him all together in one piece again, either."

"GET a load of this, fellows," Irish was saying. And, for the first time, I noticed I had collected quite an audience. There was no kidding about my closed lamp, either.

"Well," I went on, "Rosie was making such a fuss, kissing the wall and making some sort of little cooing sounds at what was inside that I had to do something quick. I got out an old boy scout hatchet and made a good sized hole in the plaster near the baseboard. The metal lath showed through them and I had to do some quick figuring. The only way I could save Tony Pizzaro was to draw that condenser charge back into my transmitter somehow—not from the wall to the receiver. I was sure the energy charges were still all in their proper order, but you can't synchronize the scanning beam of a receiver with a stationary condenser made out of a lot of steel lath or out of anything else.

"So I remained here in my room and figured out an oscillating circuit I could use to damp down the surges of energy and feed them into a high frequency synchronoscope between the meal lath and my scanning outfit. If I was quick enough on the trigger, I could catch Pizzaro on the fly and make a man out of him again. Of course I had to keep my transmitter and receiver in synchronism with each other in the meantime. I made a test with a chunk of hard rubber. It went through all right. Then I brought an insulated lead to the new circuit I'd hooked up with the transmitter. This lead was from the first layer of lath only. I'd have to do two things now. I'd have to short those two layers of lath to discharge the condenser and I'd have to synchronize at the same instant. If I had figured it out right it would work this way: by shorting the two layers of lath, not only would the energy charges which were Tony Pizzaro be discharged back to the transmitter, but the wall wouldn't be a condenser any more and, after spilling onto the sender, Pizzaro'd go right on through for reassembly in the receiver. I hoped I had it figured out right. It was a ticklish spot to be in, believe me! I was

in a shiver of cold perspiration. And still I kept *feeling* Pizzaro's presence right there a few feet from me—like a ghost, which is just about what he was; a ghost that was good and mad, what's more. I could hear the girl's constant whimpering, and see the daggers she aimed at me out of those big black eyes.

"I had an old line relay hanging around and I hooked it up in the circuit so both switches'd close at once as soon as I was synchronized with Pizzaro's string of oscillations. How that guy kept on living all busted up like that, I'll never be able to tell you. But he kept right on swearing in thought waves, or whatever they were. And my hair kept right on standing on end. I was beginning to wonder what he might be tempted to do when I did pull him together. If I did. But that wasn't stopping me. They'd call it murder or at least kidnaping if I didn't make him look like he used to again, even if there wasn't any *corpus delicti*. I know my luck when it comes to cops and judges and such."

CHUBBY sighed feelingly at this. He'd just recently had a ticket for reckless driving and it cost him plenty, besides a good bawling out. I took a quick look at the clock and went on:

"Well, everything was all ready and I tried to quiet Rosie down a little. She was still moaning for her Tony and I was worrying for fear Ma Sokolowsky'd hear her. I put my arm around her and called her 'poor little girl,' and she seemed to like that. She stopped her fuss and kind of laid her head back on my shoulder. But I had work to do, and, besides, who could tell but what this freak arrangement of Tony's atoms was able to see?—even through lath and plaster. If he'd been a real old-fashioned ghost, now, he could.

"So, instead of kissing away her tears like I might have if I'd been like Irish here, I sent the girl into the next room and told her to wait for her hubby. She moved sort of reluctantly like she'd rather stay where I was. But I chased her along. Believe it or not. I was plenty scared by this time and I'm not ashamed to admit it.

"I watched the needle of the synchronoscope go spinning around to the right so fast you could hardly see it and I gradually slowed down the lightning-fast whipping of my two scanning beams in unison. Then the needle almost came to rest at the vertical line. But, like always when you're synchronizing anything like that, it slid back and started spinning counterclockwise. It took me a minute and a half to get it back to vertical and keep it there long enough to throw my switch. In the meanwhile I could feel Pizzaro's cussing stronger and stronger and could hear the girl begin to beller in the next room.

"When the switch closed, there was a thump that shook the house and a big chunk of plaster fell off my wall right onto the transmitter table, smashing it to smithereens. Crouched in the middle of the mess was a wavering, pale blue transparent image that looked like it might be Tony. It sort of flamed for a jiffy and then snapped off abruptly like when you blow out an arc flame at a tube contact. I went quick-footing to the other room, I can tell you.

"I'd no sooner got in the doorway when I saw Pizzaro. Crouching on the receiver table, he was, with his face all screwed up like an ape's. I saw him make one leap and, after that, there was a lot of confusion. I got something in my eye and couldn't see."

"Pizzaro's fist?" howled the gang.

I took another look at the clock and saw I'd timed this just right. I had to beat it for 8-H or they'd be on the air without me and I'd catch hell.

"No," I yelled back. "Ma Sokolowsky's. She saw the plaster. When you birds come up to help me move my stuff out tonight, I'll give you an introduction to her."

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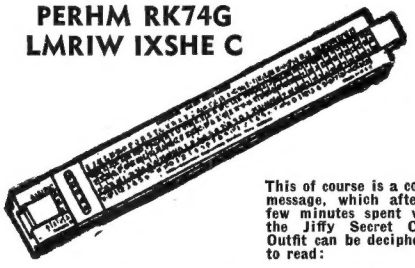

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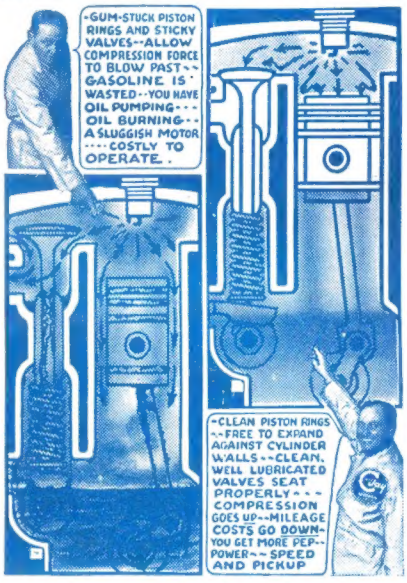

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